A STUDY OF THE SUMMER HIGH SCHOOL

WITH A DETAILED ANALYSIS OF THE ACHIEVEMENT IN TWO SUMMER HIGH SCHOOLS

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WILLIS HOWARD REALS

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SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE FACULTY OF PHILOSOPHY, COLUMBIA UNIVERSITY

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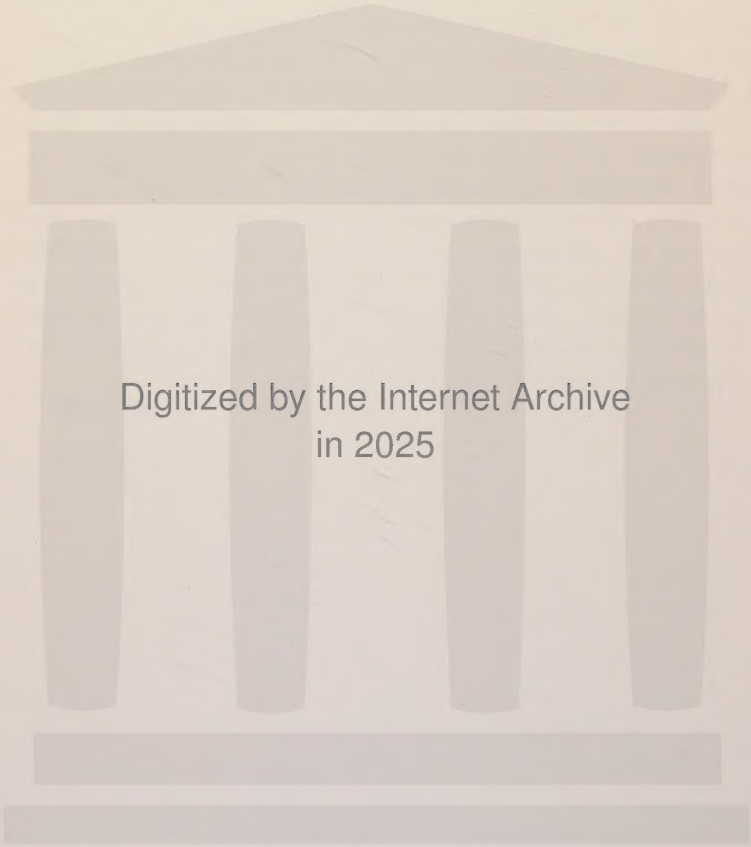
ACKNOWLEDGMENTS

To Lewis E. Stockton, Principal of the Washington Irving Summer High School, New York City; to Charles E. Riley, Principal of the Summer High School, Oswego, N. Y.; and to Elmer E. Bogart, Principal of the Morris High School, New York City, I am under the deepest obligations for the opportunity offered me to carry on this study in their schools. For encouragement and advice during the study I am obligated to Robert J. Hubbard, in charge of the New York City summer high schools. For criticism and advice I am indebted to the members of my dissertation committee: Professor Percival M. Symonds, chairman, Professor Thomas H. Briggs, and Professor Carter Alexander. For sympathy, encouragement, and assistance at every stage of the study I am most deeply indebted to my wife and companion, Mary Louise Reals.

W. H. R.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A STUDY OF THE SUMMER HIGH SCHOOL

CHAPTER I

THE PROBLEM

During the last few years much attention has been given to the movement for a longer school year. Vacation schools, summer elementary schools, summer high schools, and all-year schools are phases of this movement. The present study is concerned with one phase—that of the summer high school.

Previous Studies

Many reports and studies on the summer school have been made, but most of them deal with either the all-year school, the summer elementary school, or the vacation school.

During the past decade the summer high school has been the subject of a few studies, all of which deal primarily with the organization and administration of such schools.

The earliest study of the summer high school was that of Deffenbaugh[1] in 1917. This investigation is based on returns from a questionnaire which was addressed to all city superintendents of schools throughout the United States, and asked for information regarding the length of the summer school session, hours per day, cost per pupil, and other matters dealing with their organization and administration. At that time 109 cities in 35 states reported summer high schools.

In 1923, Deffenbaugh's study was followed by a similar one by Bush,[2] also based on a questionnaire. It was addressed to superintendents of schools in 273 cities having a population of from 25,000 to 100,000. One hundred seven replies were received, and of them, 83, or 30 per cent, reported summer high schools.

[1] Deffenbaugh, W. S., "Summer Sessions of City Schools," *U. S. Bureau of Education, Bulletin 1917, No. 45*, 45 pp.

[2] Bush, R. H., "Current Summer School Practices," *School Review*, Vol. 32, pp. 142-146, February 1924.

A third study by Hoffman[3] really supplements that of Bush, in that he studied summer schools in cities of more than 100,000 population. He tried to discover common practices, the emphasis placed on different phases of the work, and trends in policy of administration, and to establish standards. Sixty-six of the 68 cities replied to the questionnaire. Of these, 44, or 66.7 per cent, reported summer high schools.

In 1925, Jones[4] made a study of the summer high schools in Indiana, and attempted to answer the following questions:

1. How extensively are summer schools conducted by Indiana high schools?
2. Who takes summer work? Are the courses designed to care for the flunkers of the regular session?
3. How does the summer organization compare with the regular session organization in such matters as leadership, teachers, expenditures, etc.?
4. How does the quantity of work done in the summer compare with the work of the regular session?
5. How does the quality of work done in the summer, as measured by the credits earned, compare with the regular session?

A fifth study was conducted in 1927. This has not been published. Smith, the director of the summer schools in the State of New York, wrote commissioners of education in each of the 48 states and asked them for a list of high schools conducting summer sessions. He found that some state departments of education had no connection with the summer school movement, and in many states were apparently unacquainted with what was being done. He next sent a questionnaire to all superintendents of schools where he was reasonably sure summer high school sessions were being held. Replies were received from 96 of them in 28 states and the District of Columbia. His study shows: (1) the year in which summer high schools were established in each city; (2) the number of weeks each session is held; (3) hours per day; (4) minutes per period; (5) number of pupils; (6) limitation in number of subjects per pupil; and (7) the source of financial support, i. e., whether the schools were supported by tuition charges or by money from the regular tax budget. This study does not claim to be a complete survey of the summer high schools.

[3] Hoffman, M. D., "Status of Summer High Schools in Cities of More Than 100,000 Population," *School Review*, Vol. 33, pp. 107-114, February 1925.

[4] Jones, J. W., "High School Summer Work in Indiana," *Bulletin of the School of Education*, Indiana University, Bloomington, Ind. Vol. 11, No. 2, pp. 43-47, November 1925.

The sixth and most recent study, is a second one by Bush.[5] This covers only the summer high schools in the State of Illinois exclusive of Chicago. In this he studies chiefly: (1) the organization and supervision of the summer school; (2) its financial status; (3) a comparison of the work of 200 summer school pupils and 200 non-summer school pupils; and (4) the legal provisions affecting secondary summer schools in the various states.

All of these studies concern themselves chiefly with matters of organization and administration. The present study does not concern itself with either organization or administration, except in so far as they show the progress of the movement. It attempts five things:

1. To trace briefly the development of the summer school, and to show its relation to the vacation school, the summer elementary school, and the all-year school.

2. To study the quality of work which summer high school pupils do as measured by certain achievement tests, and to compare their work in the summer school with that of pupils in the regular academic year.

3. To study the ability of pupils who receive promotions at the end of the summer session to sustain themselves in advanced work during the succeeding academic year.

4. To study the summer school pupil personnel in a large summer high school.

5. To study the ways in which regular academic pupils spend their summer vacations, in order to show the probable demands for summer schools.

These things none of the earlier studies have attempted to do. Jones attempts to study the quality of work done, but he defines quality only as a measure of the number of credits earned. Bush's later study compares the ability of 200 summer school pupils with 200 non-summer school pupils in regular academic work, but he makes no attempt to study the ability which a summer school pupil has in particular subjects as a result of the work he has done during the summer session.

[5] Bush, R. H., *The Status of the Summer Schools in the Secondary Schools of Illinois.* Issued by the State Superintendent of Public Instruction, Springfield, Ill., 1927, 69 pp.

CHAPTER II

THE GROWTH OF THE SUMMER HIGH SCHOOL, AND ITS RELATION TO THE MOVEMENT FOR A LONGER SCHOOL YEAR

The purpose of this chapter is to trace briefly the changes in the length of the school year in the United States, and to show the place of the vacation school, the summer elementary school, the all-year school, but more especially the summer high school in the movement for a longer school year.

Length of the Early School Year

In the early years of American public education there were in reality two types of school systems—one rural, the other urban. The rural seems to have played a very important part in determining the length of the school year.

When schools were established in this country, our population was largely rural. The farmer had very crude implements, and possessed but little scientific information regarding the cultivation of the soil and the raising of crops. These two factors made it necessary for him to employ more labor than he could afford to hire. The most convenient and the cheapest form of labor was that of his own children. Only by a school year so arranged as to release them from their school duties at the time of crop production was the farmer able to secure the needed assistance. Poor transportation facilities, bad weather conditions, and bad roads also influenced the length of the school year. At a certain time of the year roads could not be kept open, and in the rural districts, where pupils were separated by many miles of unimproved roads, schools were necessarily handicapped if they were to attempt to conduct a continuous session. For the convenience of the farmer, and because of the demands of conditions peculiar to rural communities, the rural school calendar was divided into two terms—a spring term and a fall term. This

arrangement enabled the children to be at home at the time when there was the greatest amount of work on the farm, and also when weather conditions and roads were so bad as to prevent regular attendance.

While our rural schools were maintaining their short terms, our city school systems were conducting schools for a great part of the year. There were few vacations and very few holidays. Sessions continued, for the most part, for the entire year. It was then the custom to divide the year into four terms of twelve weeks each with a week's vacation at the close of each term.[1]

In 1840 a few of the cities conducted terms as follows: New York City, 49 weeks; Chicago, 48 weeks; Cleveland, 43 weeks; Brooklyn, Baltimore, and Cincinnati, 11 months; Buffalo, 12 months; Detroit, 259 days; Philadelphia, 251½ days; Washington, D. C., 238 days, and Boston, 224 days. The range of the daily sessions was from 5½ hours to 7 hours. The average daily session was 6⅓ hours.[2]

Movement for a Shorter School Year

Shortly after 1840 a decided movement for a shorter school year in city school systems began. Cincinnati may be taken as a typical example. A public school system was established there in 1830, and although the regulations provided for a minimum term of only six months, the schools were kept open practically the entire year, with but five weeks' vacation, except for Saturdays, Thanksgiving Day, and May Day. The sessions were seven hours long, and lasted from eight until twelve in the morning, and from two until five in the afternoon, except in Winter, when they were reduced to six hours, from nine to twelve in the morning, and from one to four in the afternoon. The arrangement continued until about 1840 when the summer vacation extended from June 19 to July 20. In 1849 the regulations provided for a five weeks' summer vacation. In 1853 schools remained closed from the last day in June until the third Monday in August, and the school day was shortened so as to begin at nine throughout the year. In 1860 an additional week was added to the vacation which then was made to extend

[1] *Annual Report of the United States Commissioner of Education*, 1891-1892, Vol. 2, p. 664.

[2] *U. S. Bureau of Education, Bulletin 1917, No. 45*, p. 8. (The length of school terms is expressed as they were in the original documents.)

from the last Friday in June to the fourth Monday in August. In 1867 the vacation was still further extended to the first Monday in September. In 1887 the session was reduced to 5½ hours, and two additional holidays were provided—Washington's Birthday and Memorial Day. The regulations also provided that schools were not to be opened the Friday after Thanksgiving Day, nor the Friday following New Year's Day if that day fell on Thursday. The schools were opened approximately 200 days in 1910, and 192 days in 1915. From 1840 to 1915 the school year in Cincinnati had been reduced by 41 days, or about 388 hours.[3] All the other cities mentioned had reduced their school years between 1840 and 1915 in a similar manner. Table 1 gives a comparison of the length of terms in each of these cities for these two dates.[4]

TABLE 1

Reduction in City School Years Between 1841 and 1915

Cities	Length of Term—1841	Length of Term—1915
New York City	49 weeks	193 days
Chicago	48 weeks	193 days
Philadelphia	251½ days	195 days
Brooklyn	11 months	193 days
Boston	224 days	183 days
Baltimore	11 months	190½ days
Cincinnati	11 months	192 days
Cleveland	43 weeks	192 days
Buffalo	12 months	190 days
Washington, D. C.	238 days	178 days
Detroit	259 days	191 days

Note: "Exact number of days was not stated in all cases because of the uncertainty as to the length of the week or month mentioned in the original documents."

While the length of the city school term was decreasing, the length of the rural school term was increasing. In 1890 the average length of the school year in the cities in the United States was 186.5 days. In 1910 it had increased to only 186.8 days, yet during the same period the average length of the rural school term had increased from 116.9 to 140 days.[5]

[3] *Op. cit.*, pp. 7, 8.
[4] Adapted from *U. S. Bureau of Education Bulletin, 1917, No. 45*, p. 8.
[5] *Annual Report, U. S. Commissioner of Education, 1911*, Vol. 2, xxviii.

Vacation Schools

The reduction of the school year in the cities had been so gradual as to be scarcely noticeable, but during this time conditions were arising which were gradually to affect the length of the school year. Among these were: the gradual awakening of public sentiment; the growth in the number of high schools requiring specific preparation for entrance which only a longer school year could provide; the development of state financial aid to poor districts; equalization funds; and penalties inflicted for failure to maintain schools in accordance with minimum term regulations.[6]

Although all these factors were significant in increasing the number of school days, there was another more powerful factor —that of the summer vacation school. The summer vacation school did not in itself increase the public school term, but it directed attention to the fact that a summer session could serve a vital function, and stimulated effort on the part of public school officials to increase the length of the school year by adding to the number of days the public schools were then in session, and also to incorporate summer school work as a part of its regular work.

The summer vacation school arose primarily to keep children occupied during their summer vacations, and a little later served as the first step in leading to the establishment of the summer elementary school, the summer high school, and the all-year school. While the cities were slowly shortening their periods of required attendance their population was increasing rapidly. Social workers felt that some remedy should be provided to counteract the bad social environment of the congested areas of the cities in which elementary school pupils were living during their long vacations. As a result vacation schools sprang up all over the United States.

The first of these were established through the efforts of private organizations and societies. The earliest of which we have record was founded in First Church, Boston, in 1866, by private undertaking.[7] The second attempt was that of a volunteer committee at Providence, Rhode Island, in 1871. The schools remained open from the third week after the close of the school

[6] *U. S. Bureau of Education Bulletin, 1916, No. 42,* p. 1.
[7] Cubberley, E. P., *Cyclopedia of Education,* Vol. V, pp. 701-702, 1919.

year until within a week of the opening of the public schools in the fall.[8] In 1896 Chicago opened its first vacation school under the auspices of the Civic Federation. Two years later the Chicago Women's Club formed an organization to conduct the schools. The course of study was arranged by John Dewey, Colonel Francis Parker, and Professor Bamberger of the Jewish Training School.[9] In a short time the Board of Education was induced to contribute to their support. In 1894 the New York City Association for the Improvement of the Poor was given the use of four public school buildings in which to conduct vacation schools. The Board of Education, in 1897, took over these schools, and opened six additional schools. In 1904 New York City had 39 such schools in operation.[10] The vacation schools established in Buffalo in 1898 were unique in that the public school teachers themselves raised the funds and furnished their services without pay.

Before 1899 twenty cities had established these schools. Nearly all of them were first established by private enterprise, but were later taken over by the public school authorities, and incorporated as a part of their school systems. Newark, New Jersey, was the first city to establish them as part of its regular public school organization. Private groups had no part in providing these schools there. The Newark Vacation schools differed from the earlier ones established. For the most part, the reasons for establishing the others were to keep younger pupils, especially those in the primary and intermediate grades, off the streets. Excursions were planned, manual arts work and kindergarten work were developed, but no effort was made to provide such instruction for pupils that they would be better prepared for their school work in the fall or that they might make up deficiencies. The early accounts of these summer vacation schools seldom mention any motives other than social ones for their organization. Philanthropists and social workers had undertaken the work solely with the hope of counteracting the harmful influence of the city streets. The only reasons given for their establishment were philanthropic and social ones.

[8] Stone, E. M., "History of the Schools of Providence, R. I., 1876," Taken from *U. S. Bureau of Education Bulletin, 1917, No. 45*, p. 9.

[9] Blackwelder, Mrs. I. S., "Extracts from the Last Report of the Superintendent of the Chicago Vacation Schools," *Elementary School Teacher*, Vol. 5, pp. 433-438, March 1903.

[10] American, Sadie, "Vacation Schools," *Journal of Education*, Vol. 26, pp. 509-518, May 1906.

Summer Elementary Schools

A little later when public school authorities took over the work of the vacation schools, they stressed more and more the academic phase of instruction. The schools were then called summer schools, and their work was very similar to the work of the elementary schools during the regular school year. Under private effort, of course, it had been impossible to articulate closely with the work of the public schools. The purpose now became, in addition to keeping the pupils off the city streets, to enable backward pupils to make up deficiencies, to help normal pupils to advance a grade, and to keep others busy at worthwhile employment.[11]

The United States Commissioner of Education in his *Annual Report for 1912* said:

> It is evident that the trend is toward more serious work in the summer vacation school, not that there will be fewer schools of the playground type, but more of the academic type.[12]

In 1916, 211 cities reported on the questionnaire sent out by the United States Bureau of Education that they were maintaining summer elementary schools. The terms ranged from four to twelve weeks. Six weeks was the most frequent length of term.[13]

The All-Year School

The all-year school is the result of an extended summer session of twelve weeks. A summer school of twelve weeks, or one-fourth of the school year, is made to articulate with the regular school year of 36 weeks. Four terms of twelve weeks each, instead of two terms of from 18 to 20 weeks each are the result. In most of such schools pupils are allowed to be absent from any one term. In some schools pupils are allowed to attend only three terms.

The first all-year school was established at Bluffton, Indiana, in 1904. It consisted of four terms of three months each, but pupils were permitted to attend but nine months in any year. Newark, New Jersey, organized its first all-year school in 1912.

[11] *U. S. Bureau of Education Bulletin 1917, No. 45*, pp. 9-10.
[12] *Annual Report of the United States Commissioner of Education, 1912*, Vol. 1, pp. 159-162.
[13] *U. S. Bureau of Education Bulletin 1917, No. 45*, p. 11.

The arguments used in favor of the all-year school were:

1. More pupils will complete the elementary grades and enter high school;
2. It will enable boys to go to work sooner, since the law requires, in addition to a certain minimum age, the completion of a certain grade;
3. It will provide a wider use for the school plant;
4. It will provide a saving of two years per pupil in the elementary school, and one year in the high school;
5. The more rapid promotion will decrease the cost of instruction;
6. It will accommodate 25 per cent more pupils;
7. It will provide an opportunity for more pupils to enter high school and industrial schools.

In 1923 Bertha Hebb of the City School Division of the United States Bureau of Education listed ten cities that had adopted the all-year plan, as follows: Albuquerque, New Mexico; Amarillo, Texas; Ardmore, Oklahoma; Bluffton, Indiana; Mason City, Iowa; Newark, New Jersey; Omaha, Nebraska (High School of Commerce); Tulsa, Oklahoma; Eveleth, Minnesota; and Gary, Indiana.[14] She failed to mention two other schools, that of Minot, South Dakota, established in 1915,[15] and that of Bayonne, New Jersey, established in 1917.[16] The all-year schools were established in Nashville, Tennessee, in 1925, two years after her report.[17]

It is difficult to say what the future of the all-year school will be. Its growth has been rather slow, and will continue so, perhaps, because public sentiment regarding the benefits of the long summer vacation is difficult to change.

The Summer High School

It was the spread of the summer elementary school and its success, no doubt, that led educators to establish summer high schools. In 1916, 109 cities reported to the United States Bureau of Education that they were maintaining summer high schools.[18]

[14] Hebb, B. Y., "All-Year Schools Have Many Advantages," *School Life*, Vol. 8, p. 198, May 1923.
[15] Clarke, W. F., "All-Year Elementary Schools," *Elementary School Journal*, Vol. 22, pp. 286-289, December 1921.
[16] *School and Society*, Vol. 5, p. 584, May 19, 1917.
[17] Weber, H. C., "The All-Year School," *Journal of Education*, Vol. 102, pp. 102-107, August 13, 1925.
[18] *U. S. Bureau of Education Bulletin, 1917, No. 45*, p. 10.

Smith's study, the only one which gives the dates when these schools were established in the different cities, gives 1897 as the date of the first school. It was established in Washington, D. C., and was followed by Cleveland in 1900, and Indianapolis in 1902. Table 2 gives the dates of organization of the summer high school sessions in 82 of the cities which Smith studied.

TABLE 2

YEARS IN WHICH CITIES FIRST ESTABLISHED SUMMER HIGH SCHOOLS

(Data taken from Smith's study)

DATES	NUMBER OF CITIES*
–1899	1
1900–1909	5
1910–1919	29
1920–1928	47
Total	82

* (Fourteen of the 96 cities did not give this information.)

In approximately three-fourths of the 109 cities earlier referred to, any pupil was allowed to attend; in the remaining cities only those pupils were allowed to attend who had failed or who were exceptionally capable. The number of weeks summer high schools were in session ranged from four in two cities to twelve weeks in one city. Six weeks was the most frequent length of term.[19]

In 1923-24, 135 cities of over 10,000 population reported summer high schools with a total enrollment of 89,828. This number increased within the two-year period following to 161 cities and an enrollment of 111,373, or approximately 3 per cent of the total public high school population for the entire United States. Table 3 [20] gives the growth of summer high schools in numbers and enrollment, based on figures in the annual reports of the United States Commissioner of Education. The year 1921-1922 is the first year for which the commissioner reports on summer high school statistics.

[19] *Op. cit.*, p. 10.

[20] "Biennial Surveys of Education," *Bulletin, 1924, No. 14*, pp. 182-187, *Bulletin, 1926, No. 23*, pp. 452-460; *Bulletin, 1927, No. 32*, pp. 64-72.

TABLE 3

GROWTH OF SUMMER HIGH SCHOOLS FROM 1921 TO 1926 BY TWO-YEAR PERIODS*

CITIES	1921–1922			1923–1924			1925–1926		
	NO. OF CITIES	NO. OF PUPILS	NO. OF TEACHERS	NO. OF CITIES	NO. OF PUPILS	NO. OF TEACHERS	NO. OF CITIES	NO. OF PUPILS	NO. OF TEACHERS
10,000 to 30,000	34	3,177	150	57	5,796	239	72	7,506	327
30,000 to 100,000	39	9,123	379	38	9,734	357	48	13,119	463
Over 100,000	29	46,043	1,441	40	74,298	2,110	41	90,748	2,698
Total	102	58,343	1,970	135	89,828	2,706	161	111,373	3,488

* (The year 1921 is the first in the Commissioner's Annual Reports to give *Summer High School Statistics.*)

In order to give a true picture of the extent of the summer high school enrollment, the numbers enrolled should not be compared with the total academic enrollment for the United States, but with the academic enrollment in the cities only, for the summer school is a feature of the city school systems. A still more accurate comparison would be that of the summer high school enrollment in the particular cities where those schools were established with the academic enrollment in those cities. Hoffman gives this for 27 cities of over 100,000 population which he studied. The range is from 3.4 per cent of the academic enrollment in Boston to 33.8 per cent in Reading, with a median enrollment for all the cities of 13.3 per cent.[21]

State encouragement and support will give great impetus to the summer high school movement. The situation in New York State as a result of such encouragement is a most striking one. In 1925 the legislature appropriated money for the supervision of the summer high schools of the state for the first time. Previous to this few schools had existed. In that year—the first of state supervision—the enrollment was 19,419. In two years the enrollment had increased by more than 18,000. Table 4 gives the registration for each of the three years under state super-

[21] Hoffman, M. D., "Status of Summer High Schools in Cities of More Than 100,000 Population," *School Review*, Vol. 33, pp. 107-114, February 1925.

vision and the percentage of gain of each year over the preceding year. The registration of 1926 represented approximately 9 per cent of the 300,260 pupils registered in the secondary schools of the state.[22]

The unpublished study of Smith [23] may be taken to represent the present organization of the summer high schools. The length of the session varies from 5 to 8 weeks, with 6 the most frequent number. Schools are in session from 3 to 5 hours per day, with 4 the most common number. The minutes per period vary from 30 to 130 minutes, with a majority of schools conducting 60-minute periods. One school allows one subject per pupil; one allows 3; one allows 4; and all others allow not more than 2. About 50 per cent of the schools charge tuition.

This rapid growth in the summer high schools might be ac-

TABLE 4

REGISTRATION IN NEW YORK STATE SUMMER HIGH SCHOOLS DURING THREE YEARS OF STATE SUPERVISION

YEAR	REGISTRATION	GAIN OVER PRECEDING YEAR
1925	19,419	
1926	26,935	38.7%
1927*	37,528	39.3%

* Figures taken from advanced copy of 1927 *Summer High School Statistics.*

counted for in many ways. The extraordinary growth in public and private high school enrollment must necessarily create new demands. The high school enrollment grew from 1,561,556 to 2,131,655 in the five-year period from 1915 to 1920; to 3,363,515 in 1925; and to 3,541,254 in 1926. The per cent of pupils enrolled in the high school as compared with the total public school enrollment during this time increased from 7.9 per cent in 1915 to 9.8 per cent in 1920, and to 14.3 per cent in 1926. The enrollment in the private and parochial high schools in the latter year was 295,625. The total high school population during 1926 was, therefore, nearly 4,000,000.[24] While the population in

[22] Figures taken from the Annual Reports of the Education Department of the State of New York. *Report of 1926,* p. 249; *Report of 1927,* Vol. 1, p. 191.
[23] *Op. cit.*
[24] *U. S. Bureau of Education, Bulletin 1927, No. 39,* pp. 10, 48.

the United States increased 73.5 per cent from 1890 to 1922, the high school enrollment increased 610 per cent.[25]

When the American Secondary school was catering only to the more prosperous and more intellectual classes, there was less occasion for demanding an extension of opportunities for high school work during the summer vacation than when later the selective character of the secondary school was breaking down. Thorndike has estimated that whereas, in 1890, of all pupils who reached their teen age only 1 in 10 entered high school, in 1918 almost 1 in 3 entered high school, and on the assumption that the correlation between native capacity and continuance in school can be represented by a correlation of + .70, he shows that the high school is drawing more and more from the lower levels of intellect.[26]

The increase in numbers, no matter from what source, has increased the demands upon the secondary school. The school has already responded to these demands by its more adequate curricula, special adaptation of courses, and better teaching methods, and is now responding by means of offering an extended term for those who can profit by it.

There are a great many arguments that can be advanced for this extended term which the high school is offering in the summer high school. In the first place, if success in the summer school is at all comparable to success in the regular academic year, there must result economy in administration, since it could not conceivably cost more to teach a summer school class of from 6 to 8 weeks than to teach a class during the regular academic year of from 16 to 19 weeks, provided classes are approximately the same size. The overhead charge when fuel is not required must be much less. Pupils promoted in the summer school advance through school more rapidly and thus sooner vacate their places for others to fill; and, in our larger cities, where, frequently, hundreds and sometimes thousands attend, there must result a relief for the building shortage.

In the second place, pupils of lower intelligence demand more than special adaptation of curricula. They often come from the lower economic levels, and even four years spent in high school is an immense sacrifice. These pupils often must spend

[25] *U. S. Bureau of Education Bulletin 1924, No. 38*, p. 8.
[26] Thorndike, E. L., "Changes in the Quality of Pupils Entering High School," *School Review*, Vol. 30, pp. 355-359, May 1922.

more than four years to complete the ordinary four-year course. An extra summer session will enable them to make up deficiencies, will take away their lack of confidence which comes from repeated failures, and will make them more contented and better investments for society. The summer high school must rapidly increase in numbers in order to satisfy the demands of pupils of lower economic and lower intelligence levels who cannot afford to remain in school far beyond the compulsory age level.

The summer high school has rarely resulted in the all-year high school. Newark, New Jersey, adopted two all-year high schools in order that they might articulate more closely with the work of the all-year elementary school. Newark and Omaha are the principal cities having all-year programs. The summer session seems to have filled the needs in most communities and the all-year high school has not had a very large growth. It is probable that the summer high school will adapt itself so well to the demands as to make all-year high schools unnecessary.

Summary

1. The early school year was of different lengths for urban and rural communities. The rural schools had very short terms; the city schools had terms extending for almost the entire year.
2. City schools had reduced their terms very gradually but very materially after 1840. The rural schools at the same time gradually increased their terms.
3. The growth in numbers and in size of cities led to social conditions which caused a need for vacation schools.
4. Vacation schools were first established by private organizations to overcome the evils of the city streets. Boards of Education gradually took over the work of these schools and placed more emphasis upon the academic phase of instruction. These were then called summer elementary schools.
5. The summer elementary schools led to the establishment of the all-year school and the summer high school.
6. The growth of the all-year schools has been very slow; not more than a dozen or more cities have established them.
7. Summer high schools have grown rapidly in numbers and enrollment. State encouragement will develop them.
8. The growth of the all-year high school has been very insignificant.

CHAPTER III

DIVISIONS OF THE PROBLEM

In Chapter II has been shown the place of the summer high school in the movement for a longer school year, and its relation to the other phases of that movement. It was not the writer's intention to study carefully all the phases concerned, but to study them only far enough to show the origin and development of the summer high school and its significance; nor was it desired to study exhaustively all the details and practices of organization and administration of the summer high school. That has been done already by other people, and is an undertaking in itself worthy of no small effort.

Four Fundamental Problems

The principal questions which the present study attempts to solve are:

1. What is the quality of the work accomplished in the summer high school? How does it compare with the work of the regular academic year?
2. How do summer high school pupils sustain themselves the semester following their promotions in the summer school? Do pupils who succeed in passing a subject during the summer session possess ability to sustain themselves during the succeeding academic year?
3. What class of pupils attends the summer high school? How do these pupils compare in age and intelligence with regular academic pupils? What are their reasons for attending the summer school? What are their reactions as to the value of the instruction they receive? Are these pupils taking advanced work, or are they taking subjects previously failed in the regular academic year?
4. What are the purposes which the summer high school may serve? Are there large numbers of high school pupils who

remain idle and at home during their summer vacations? If these pupils are not idle, are they engaged in worthwhile employment?

These four problems should be the factors of greatest significance in a study of this kind. The organization and administration of the summer schools have been studied by others, and, although a study of such is most important in showing practices and policies, yet it is of less importance than a study of what is actually being accomplished in the summer school, the needs which such schools may satisfy, and the abilities which pupils possess as a result of their attendance during the summer session. The justification for these schools cannot be based, however, solely upon the quality of work which they do, especially if judged by its approximation to regular academic standards, for they may be performing a service to the community of far greater importance. The quality of the product must also be considered with respect to the quality of its raw material. It was for that reason that in addition to the study of the quality of the individual work, and the ability of summer school pupils to do advanced work the following semester, it was considered desirable to include a discussion of what sort of pupils are being served by the summer high schools, and what the demands for such schools are.

Sources of Data

1. Summer High School Achievement and Pupil Personnel

All of the data relative to the achievement and pupil personnel in the summer high school was collected during the summer session of 1927.

A. *The Schools.* Two summer schools were studied: the Oswego High School, New York, and the Washington Irving High School, New York City. Oswego is located in the northern part of the state and has a population, according to the state census of 1925, of 22,369. It therefore represents the smallest group of cities for which summer high school statistics are given in the annual report of the United States Commissioner of Education. New York City represents the largest.

These schools were chosen, first of all, because of their availability, and the ease with which the writer could work in them.

He has known Principal Riley of the Oswego High School for a number of years, and his coöperation and assistance were readily secured. A school in New York City was easy of access because the writer lived there during the summer of 1927, when he was conducting the study. In the second place, these two schools were used because they represent the largest and smallest of the group classification of cities having summer schools as reported by the Bureau of Education. There is no reason to suppose that the work in these two schools differs very materially from the work in other summer high schools.

Any one of eight summer high schools in New York City might have been studied. It was, therefore, a problem to secure the most representative one. The Washington Irving High School was finally decided upon because it seemed to have a more representative group of pupils than any of the others. There were two reasons which led to this conclusion. The first reason was its convenient location. It is most conveniently reached by all of New York City's transportation lines. It is located at the corner of Irving Place and Sixteenth Street within two short blocks of Union Square, where both of the city's subway systems have express stations. Within one block of the school is the Third Avenue Elevated station, and within two blocks, the Second Avenue Elevated station. Both surface cars and bus lines are within two or three blocks. Pupils are able to come to Union Square from any part of the Bronx, Manhattan, Brooklyn, and Queens Boroughs for only a five-cent fare, and in many instances without transferring. Principal Stockton stated that some pupils came from distant parts of Brooklyn in order to take advantage of the single fare, even though other schools would have been very much nearer. Forty-two public and private high schools, and Junior high schools were represented in the study. A second reason for selecting this school was its extended offering of courses. It is the custom in the New York City summer high schools not to offer all courses in all schools. There are certain subjects which, if offered in all the summer high schools, would not invite a sufficient registration to justify the appointment of teachers of those subjects to each school. In order to avoid disappointing the pupils who desire to take such courses, the summer school officials concentrated registration in these courses in specific high schools. In this way

they were able to organize a sufficient number of classes to justify the expenditure for supervision. Washington Irving Summer High School was one in which nearly all courses were offered during the 1927 summer session. This factor also made for a wider and a more representative sampling.

B. *Summer High School Pupil Personnel.* On the last day of the Washington Irving Summer High School session a questionnaire was given each pupil during the regular periods. They were told they need not give their names if they did not care to do so, but with very few exceptions, all gave their names. Principal Stockton had earlier prepared a mimeographed bulletin for teachers telling in detail just what was to be done. The questionnaire asked for information regarding age, sex, reasons for attending summer high schools, and other items useful in a personnel study. The questionnaire is given in the appendix.

C. *Summer High School Achievement.* The writer, with 13 assistants, all of whom were active teachers, did the testing in the Washington Irving High School on August 25, 1927, the week of the final summer school examinations. All the pupils taking the subjects in which tests were to be given were requested by the school authorities to assemble at the appointed time. They were told they were to be given tests, and although they were not told that these tests would have weight in determining their final marks, many of them felt that such would be the case. All the teachers assisting in the testing were acquainted with tests and testing procedures, but, in order to make absolutely certain that they had a complete understanding of the tests to be given, the writer held two meetings with them, at which he went over the tests and testing instructions carefully, and explained in detail the procedures to be followed.

The following were the tests used in the Washington Irving Summer High School:

1302 Terman Group Tests of Mental Ability, Form A.
541 Schorling-Sanford Geometry Tests, Form A.
275 White Latin Tests, Form A.
486 American Council French Tests, Part I, Form A.

In the Oswego Summer High School the principal administered the tests. Those used there were:

223 Terman Group Tests of Mental Ability, Form A.

25 Ruch-Cossman Biology Tests, Form A.
Hotz Algebra Scales, Series A.
102 Equations and Formulas.
96 Problems.

2. Ability of Summer High School Pupils to Do Advanced Work

In order to study the ability of the promoted summer high school pupils to do advanced work, the writer, in most cases, visited personally the home schools of most of the pupils who had previously taken the achievement tests, and who had also received promotions at the end of the summer session. This was done shortly after the close of the first semester in January, 1928. He secured from the final semester reports the marks for all pupils in advanced terms of the subjects already passed in the summer school, and also a distribution of marks for all pupils in the same terms of the subjects in which he had secured individual marks of summer school pupils. In regents subjects the distribution was taken from the final regents summaries which each school files with the Board of Education. In all other subjects the writer had to take the distributions from teachers' class sheets. Principal Riley submitted similar reports for the Oswego High School.

3. Demands for Summer High Schools

To determine what the actual demands for summer high schools are, it was thought best to make a study of how New York City High School pupils spend their summer vacations. The writer considered that this would show more accurately than anything else what needs a summer high school might satisfy. It is not claimed that the demands for summer high schools in New York City represent the demands in other cities. There is no reason to suppose, however, that it does not represent fairly accurately the demands at least in our larger cities.

For this study it was necessary to secure as large a random sampling as possible of New York City's high school pupils. It was impossible to study a group in each of the several high schools, and had this been done it would have been rather difficult to make a selection in each school. It was desired, therefore, to secure a school if possible which could be considered fairly representative. The Morris High School was

finally decided upon. In most of New York City's older high schools the sexes are segregated. This school is co-educational. It is neither in the oldest or newest part of New York City, and no local conditions seemed to exist which would draw one group of pupils more than another. Principal Bogart was most helpful in suggestions and assisting in carrying out the study.

About a week before December 12, 1927, the principal sent a mimeographed notice to all his teachers, both in the main building and the two annexes, saying that on December 12 and 13, they would have their pupils fill out questionnaires. He gave all directions for the filling out of the questionnaires and anticipated any questions that might arise. Two days were specified for filling out these blanks due to the fact that home-room periods are held on two different days in that school; one-half of the school holding their home-room periods on December 12, the other half on December 13. All pupils in the school on those dates, approximately 3,500, filled out these blanks. (This questionnaire is also given in the appendix.)

CHAPTER IV

ACHIEVEMENT IN THE SUMMER HIGH SCHOOL

One of the most important questions to be asked regarding the work of any school is: What is the quality of the work done? Chapter IV attempts to answer this question for the summer high school by comparing the quality of the work done in the summer high school with the work done during the regular academic year.

Regents Results

In the New York State high schools one basis of comparison might be, and often is, the results of the regents examinations. These are uniform examinations that are given throughout the state each year at the end of each term, in January and June, and also in August at the close of the summer session, to pupils who have satisfactorily completed definite and prescribed work in academic subjects. The majority of these examinations cover not less than a complete year's work in any subject. In this state during the year 1925-1926, 808,374 of these papers were written. Of this number 617,171, or 76 per cent, received passing grades.[1] In the following 1926 summer session, of 15,199 papers written, 66.6 per cent of them received passing grades.[2] In the New York State Commissioner of Education's report for the same year, A. W. Skinner, director of the examinations and inspection division, said:

> While the pupil registration (in the summer high school) increased over 38.7 per cent over the previous year, there was a gain in the number of papers written of 82.3 per cent. As over 10,128 papers were accepted by this department, it is evident that over 6,000 pupils have secured regents credit in one or two subjects as the result of our August examinations. The per cent of papers written which were accepted, shows only a slight gain over the previous year, and stands about 8 per cent lower than the average for the state in the January and June examinations. On the

[1] *Twenty-Third Annual Report, 1927.* University of the State of New York, Education Department, Vol. 2, p. 191.
[2] *Op. cit.*, Vol. 1, p. 191.

whole this is a creditable showing if we consider the short term of the summer high school and the large number of repeaters who enter the examinations. . . . There is a rather close and interesting correlation between the salaries paid in the summer high school and the regents record shown by the school.[3]

The statistics for the 1927 summer session show that of 22,092 papers written in the New York State summer high schools, 15,250, or 69 per cent, received passing grades. This is an increase of 2.4 per cent over the preceding year. During the same summer session, the per cent of successful papers written in New York City ranged from 59.5 in one school to 78.5 in two schools.[4] On the whole it would seem that the New York City summer school record does not differ very materially from the record of the other large summer high schools throughout the state.

This comparison of regents results has been given primarily as a matter of interest. The comparison of regents records from year to year, or from the summer session to the academic year, can prove nothing. These examinations set by the State Education Department are subjective; therefore, their content and degree of difficulty must vary with different examination periods. It can not be proved that the teacher or the school with a superior regents record is really superior in the quality of the instruction.

There are many things other than the ability to pass examinations which must be taken into account in judging the efficiency of a school. One school with a very large proportion of pupils passing the regents examinations may be no more efficient than a school with a much smaller number passing these same examinations. The former school may have been dealing with a group of pupils with intelligence much higher than the second school, or with a group of pupils of better social background. In order to judge the efficiency of instruction, therefore, the kind of pupil personnel must also be taken into account. However, such a comparison of regents results may be interesting, perhaps, in showing a certain trend in the summer high schools of the state. Considering the time that the summer high schools are in session —6 or 8 weeks, as compared with the 18 or 20 weeks of the regular academic term—and that such a large proportion of the

[3] *Op. cit.*, Vol. 1, pp. 188-189.
[4] *Advanced Statistical Report* for the 1927 New York State Summer High Schools.

summer high school pupils are repeaters, it is very remarkable that there is shown such a closeness of results.

Study of Achievement in Two Summer High Schools

The writer undertook to study the achievement in the Washington Irving Summer High School, New York City, and the Oswego, New York, Summer High School, by using objective tests, and comparing the results from these tests with the results of the same tests given during the academic year. In the Washington Irving High School three objective tests, Latin, French, and Geometry, were given; in the Oswego High School, Biology and Elementary Algebra were given. These five tests were decided upon because Professor Symonds had recently established ability standards for the high school based upon these and four other tests, and it was hoped that these standards might be used as criteria. The number of tests had to be limited, because it was necessary to give all the tests at the close of the summer session, and it was impossible to compel the pupils to return for more than one day. Since the number of tests had to be limited, an attempt was made to secure tests which would make possible the greatest number of comparisons. The Latin and French tests were taken by the pupils in the first and second terms of each of the first three years of those languages. This made possible six different comparisons for each language. All the tests except biology were taken by both first and second term pupils, and since, for the purposes of this study, the pupils who were repeating a particular term of a subject were separated from those who were taking it for the first time, two comparisons for each term, rather than one, were often possible. In all, 31 comparisons were made.

A total of 1,575 achievement tests and the same number of Terman Group Tests of Mental Ability were given. After scoring and tabulating the tests, it was discovered that some of the pupils had not taken both the achievement test and the Terman test, therefore their papers had to be disregarded. Of the 1,525 tests remaining, 364, or 24 per cent, were taken by pupils who had just begun to study that particular term of the subject during the 1927 summer session. The remaining 76 per cent were repeating the work which they had already failed during the preceding academic year. Since it is customary in the summer

school to call the first the advanced group, and the latter the repeat group, these designations have been used in the remainder of this study. Table 5 gives the exact number of pupils taking each particular term of each test. This shows that 17 different terms of work are represented. Tables 6, 7, 8, and 9 contain summaries of the results of the testing. In each term the number of cases is given, together with the medians, upper and lower quartiles, and the semi-interquartile range for both the Terman and the achievement tests. The advanced and repeat groups for each term are given in separate tables.

Comparison with Ability Standards

Symonds has set up ability standards for regular academic pupils for different times during the school year, on December 1, March 1, and June 1.[5] These ability standards are not norms

TABLE 5

Number of Pupils in the Summer High School Taking Achievement Tests

Subject	No. Taking First Term Subjects	No. Taking Second Term Subjects	Total
Geometry	219	322	541
Latin:			
Grade 9	43	75	118
Grade 10	30	59	89
Grade 11	32	36	68
French:			
First Year	57	98	155
Second Year	111	149	260
Third Year	36	35	71
Biology	0	25	25
Algebra:			
Problems	52	44	96
Equation-Formula	54	48	102
Total	634	891	1,525

[5] Symonds, P. M., *Ability Standards for Standardized Achievement Tests in the High School*. Bureau of Publications, Teachers College, Columbia University, New York City, 1927, 91 pp.

TABLE 6

Summary of Test Results for First Term Advanced Summer School Pupils

Subject	No. of Cases	Terman Scores				Achievement Scores			
		Med.	Q_1	Q_3	Q	Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	15	147.5	128.8	170.6	20.9	16.5	14.9	23.1	4.1
White Latin:									
Grade 9	2								
Grade 10	1								
Grade 11	12	158.3	140.0	175.0	17.5	145	122.5	148.8	13.2
American Council French:									
First Year	8								
Second Year	15	126.2	96.9	150.6	26.9	43	36.8	52.5	7.8
Third Year	10	165	107.5	173.8	33.2	81	69	88.5	9.8
Hotz Algebra:									
Problems	50	106.9	91.9	132.5	20.3	3.2	2.5	4	.8
Equation-Formula	51	107.2	92.9	131.2	19.2	5.5	4.5	6.3	.9
Total	164								

TABLE 7

Summary of Test Results for First Term Repeat Summer School Pupils

Subject	No. of Cases	Terman Scores				Achievement Scores			
		Med.	Q_1	Q_3	Q	Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	204	118.8	97.9	146.4	24.2	16.1	13.3	19.1	2.9
White Latin:									
Grade 9	41	124.4	103.1	144.4	41.3	73.2	58.1	86.2	14
Grade 10	29	138.8	110.6	161.9	25.6	112.9	98.1	125.8	13.8
Grade 11	20	152.5	135	168.3	16.16	140	126.7	151	12.2
American Council French:									
First Year	49	111.9	98.2	138.8	20.3	20.8	15.3	26.5	5.6
Second Year	96	123.6	102.5	142	19.8	44	36.7	49.8	6.6
Third Year	26	131.7	116.2	152.5	18.2	64	59.5	71.5	6
Hotz Algebra:									
Problems	2								
Equation Formula	3								
Total	470								

TABLE 8

SUMMARY OF TEST RESULTS FOR SECOND TERM ADVANCED SUMMER SCHOOL PUPILS

SUBJECT	No. OF CASES	TERMAN SCORES				ACHIEVEMENT SCORES			
		Med.	Q_1	Q_3	Q	Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	66	138.3	122.5	158.2	17.9	30.7	27.8	35.5	3.8
White Latin:									
Grade 9	13	137.5	113.1	169.4	28.2	100.8	85.6	106.9	10.6
Grade 10	6								
Grade 11	11	148.8	128.8	176.2	23.7	151.9	146.9	160.6	6.8
American Council French:									
First Year	10	117.5	88.8	142.5	26.8	31	24.5	39	7.2
Second Year	32	140	121.7	157.5	17.9	68	57	80	11.5
Third Year	24	145	125	170	22.5	80.7	68	88	10
Ruch-Cossman Biology	7								
Hotz Algebra:									
Problems	15	107.5	89.4	126.2	18.4	4.5	3.6	5.2	.8
Equation-Formula	16	100	87.5	125	18.8	7.2	6.2	8.5	1.2
Total	200								

TABLE 9

SUMMARY OF TEST RESULTS FOR SECOND TERM REPEAT SUMMER SCHOOL PUPILS

SUBJECT	No. OF CASES	TERMAN SCORES				ACHIEVEMENT SCORES			
		Med.	Q_1	Q_3	Q	Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	256	136.3	114.5	156.2	20.8	30	26.3	35.1	4.4
White Latin:									
Grade 9	62	116.2	105.5	143.5	19	95	83.1	107.9	12.4
Grade 10	53	139	120.3	156.8	18.2	115.6	100.4	127.6	13.6
Grade 11	25	145.8	126.2	161.2	17.5	125.8	115.3	141.2	13
American Council French:									
First Year	88	125	105.7	143.3	18.8	29	23.4	35.7	6.2
Second Year	117	132.2	110.7	152.3	20.8	54.1	48.6	60.4	5.9
Third Year	11	131.2	108.8	141.2	16.2	68.5	60.8	80.5	9.8
Ruch-Cossman Biology	18	101.7	72.5	113.8	20.6	29.5	25.2	34.5	4.6
Hotz Algebra:									
Problems	29	108.1	93.1	121.9	14.4	4.8	4.1	5.6	.8
Equation-Formula	32	108.8	92.5	122.5	15	8.2	6.8	9.4	1.3
Total	691								

in the sense that they are the average scores which pupils of certain intellectual levels attain, but are standards, or goals, which represent achievement to be aimed for. A comparison with such standards ought to be significant. The summer school tests were given at the close of the summer session, hence, for those pupils who were at that time completing a full year's work in any subject, this date should correspond quite accurately to Symonds' June 1 standards. For those pupils who had just begun a subject, such as algebra or French 2, in summer school, the date of the achievement test in the regular academic year corresponding to that time would be the close of the first semester, or approximately January 15, since pupils who begin subjects in summer school are expected to complete the first term of these subjects. A provision has been made for an interpolation for this date; so a comparison may also be made here.

Terman Test Scores

In the study just referred to, all pupils were given Terman Group Tests of Mental Ability on approximately October 1 of the school year in which they later took achievement tests. Had these pupils taken the Terman tests later than October 1, or at the time they took their achievement tests, their Terman scores would have been larger. Symonds believes that this increase is about 1.5 points per month for pupils with an initial score of 139.[6] Since the summer school groups took the Terman Test at the same time they took the achievement tests, an allowance for their increased Terman scores has to be made. For a pupil completing a year of any subject, the date of this achievement test will correspond quite closely to June 1. His Terman score, however, will be much higher than Terman scores for similar groups who took the Terman test on October 1, eight months before they took the June 1 achievement test. An allowance, therefore, must be made for this extra eight months' advantage which the summer school group has, and their Terman scores must be reduced by this amount. Symonds has given a regression equation for estimating yearly gain from an initial score:[7]

$$Y_{\text{gain}} = -.169X_{\text{score}} + 40.62$$

In the case of the summer group, however, instead of estimat-

[6] *Op. cit.*, p. 41.
[7] *Op. cit.*, p. 47.

ing from an original score to a present score, it is necessary to reverse the process, and to estimate from a present score what the Terman score would have been had the test been taken some months previously. The above equation can be adapted to this process. In the case of the June Standards, a gain of eight months from October 1 to June 1, or two-thirds of a year, must be allowed for. The equation then becomes:

$$\tfrac{2}{3}\,(-.169X + 40.62) + X = \text{Present Score}$$

or

$$2.662X = 3\ (\text{Present Score}) - 81.24$$

For the summer pupils completing only the first semester's work of any subject, the date of the achievement test corresponds quite closely to January 15. An allowance of approximately three months, or one-fourth of a year, must be made in computing the Terman score as of October. For this the regression equation becomes:

$$\tfrac{1}{4}\,(-.169X + 40.62) + X = \text{Present Score}$$

or

$$3.831X = 4\ (\text{Present Score}) - 40.62$$

Table 10 gives the Terman scores for summer high school pupils completing only one semester of a subject, both advanced and repeat groups corrected to October 1, and also a comparison with the larger groups of pupils which were used in determining the ability standards. Table 11 gives similar information for the second term groups. In Table 10, it will be noticed that the scores of summer school pupils are much lower than the scores for similar groups of regular academic pupils. In only two instances are the summer groups above those of the regular academic groups, and then only by 1.4 and 8.9 points, respectively. The other differences range from 2.7 to 41.8. Table 11 for the June groups shows even more pronounced differences. In only one instance has a summer group a higher Terman score than the regular academic groups, and then by only 5.9 points. The other differences range from 12.8 points to 61.9 points. It is also of interest to note that the median scores of the repeat group in both first and second terms of work are far below the median scores of the advanced group. It appears quite evident that in

TABLE 10

TERMAN SCORES OF FIRST TERM SUMMER HIGH SCHOOL PUPILS COMPARED WITH TERMAN SCORES OF SYMONDS' DECEMBER 1 GROUPS

NAME OF TEST	SUMMER SCHOOL PUPILS' SCORES		CORRECTED TO OCTOBER 1		SYMONDS' GROUPS TERMAN SCORES	AMOUNT BY WHICH SUMMER GROUP EXCELS	
	Advanced	Repeat	Advanced	Repeat		Advanced	Repeat
Schorling-Sanford Geometry	147.5	118.8	143.4	113.4	134.5	+ 8.9	− 21.1
White Latin:							
Grade 9		124.4		119.3	117.9		+ 1.4
Grade 10		138.8		134.3	137		− 2.7
Grade 11	158.3	152.5	154.8	148.6	160.4	− 5.6	− 11.8
American Council French:							
First Year		111.9		106.2	128.1		− 21.9
Second Year	126.2	123.6	121.2	118.4	144.5	− 23.3	− 26.1
Third Year	165	131.7	161.7	126.9	168.7	− 7.0	− 41.8
Hotz Algebra:							
Problems	106.9		101.0		113.2	− 12.2	
	107.2		101.3		113.6	− 12.3	
Total						− 51.5	− 124.0

the summer session group we are dealing with a group with intelligence inferior to corresponding groups in the regular academic year, and also that the pupils who are repeating work in the summer session are of lower intelligence than the group taking advanced work.

ACHIEVEMENT

It is not quite so simple a matter to compare the achievement scores of the summer groups with the achievement scores of the groups which Symonds studied. To make the comparison it is first necessary to have equivalent groups. Symonds developed his standards by plotting on a scatter diagram the scores of the achievement tests and the Terman tests for each of the groups, and plotting the line of equi-percentiles, and then reading values for the achievement tests for each five points of the Terman test directly from this line. The standards thus derived for each sub-

TABLE 11

TERMAN SCORES OF SECOND TERM SUMMER HIGH SCHOOL PUPILS COMPARED WITH TERMAN SCORES OF SYMONDS' JUNE 1 GROUPS

NAME OF TEST	SUMMER SCHOOL PUPILS' SCORES		CORRECTED TO OCTOBER 1		SYMONDS' GROUP TERMAN SCORES OCTOBER 1	AMOUNT BY WHICH SUMMER GROUP EXCELS	
	Advanced	Repeat	Advanced	Repeat		Advanced	Repeat
Schorling-Sanford Geometry	138.3	136.3	126.3	123.1	138.1	− 12.8	− 15
White Latin:							
Grade 9	137.5	116.2	124.4	100.4	118.5	+ 5.9	− 18.1
Grade 10		139		126.1	143.5		− 17.4
Grade 11	148.8	145.8	137.2	133.8	176.3	− 38.9	− 42.5
American Council French:							
First Year	117.5	125	101.9	110.4	132.1	− 30.2	− 21.7
Second Year	140	132.2	127.2	118.5	148.7	− 21.5	− 20.2
Third Year	145	131.2	132.8	117.3	179.4	− 46.4	− 61.9
Hotz Algebra:							
Problems	107.5	108.1	90.6	91.3	117.3	− 26.7	− 26
Equation-Formula	100	108.6	82.2	92.1	117.7	− 35.5	− 25.6
Ruch-Cossman Biology		101.7		84.1	115.2		− 31.1
Total						− 211.3	− 279.5

ject for the dates December 1, March 1, and June 1 are given on pages 78 to 85 of the study earlier referred to. We have already made note that the achievement scores of the summer group for the completion of a year of work in any subject represent a date corresponding very closely to June 1. A comparison with groups taking the same tests on these dates can easily be made. The summer group completing one term of work in a subject represents a date corresponding roughly to January 15. No standards have been set up for that date, but an interpolation may be made which will allow such a comparison. To interpolate for a Terman score between any two successive points we must assume that a pupil's score on an achievement test increases

uniformly with intelligence. The comparison between the summer groups completing a year's work and the standards for June 1 is quite simple, but the comparison between the summer groups completing one-half year's work, or an achievement corresponding to January 15, is not possible unless we also assume that scores on an achievement test increase fairly uniformly between two successive dates three months apart. There is no reason to suppose that this will not be the case.[8]

Two examples, one for a June group and one for a January group, will be given. For the June group we shall take the Equation-Formula test in the Hotz Algebra Scales. The median Terman score for the advanced group corrected to October 1 is 82.2. The achievement score for the group is 7.2. Symonds' ability standards show that a group having a Terman score of 80 should have an achievement score on June 1 of 5.2, and that a group having a Terman score of 85 should have an achievement score of 5.6 on the same date. The Terman score of 82.2 is 2.2/5 of the distance between 80 and 85. The difference in the achievement scores for these two dates is .4. Therefore, 2.2/5 (.4) is the amount that should be added to the achievement score of 5.2 to give an achievement score corresponding to a Terman score of 82.2. Table 12 gives the achievement scores for all second term summer school pupils, and the scores according to the ability standards which groups having their median Terman scores should receive on the same achievement tests. Columns 5 and 6 give the differences in achievement scores in favor of the summer school pupils. In every instance the summer groups have exceeded the ability standards. Not enough groups of the same kind are available to show whether the difference is in favor of the advanced group or the repeat group.

The comparison of the summer group completing only the first term of their work, or a date corresponding to January 15, with the ability standards is not quite so easily made. In addition to assuming, as we have before, that achievement scores increase uniformly with intelligence, we must also assume that achievement scores for the same levels of intelligence increase uniformly between two dates three months apart. The standards have been set up for December 1 and March 1. January 15 is one-half the distance between these two dates. A correction,

[8] *Op. cit.*, pp. 53, 54.

therefore, has to be made. One illustration of how the correction to January 15 is made will suffice. The Terman score of the Schorling-Sanford first term advanced group corrected to October 1 is 143.4. By referring to page 78 of the ability stand-

TABLE 12

COMPARISON BETWEEN SECOND TERM SUMMER HIGH SCHOOL PUPILS' ACHIEVEMENT TEST SCORES AND SYMONDS' JUNE 1 ABILITY STANDARDS

NAME OF TEST	ADVANCE OR REPEAT	SUMMER SCHOOL PUPILS' INTELLIGENCE SCORE. CORRECTED TO OCTOBER 1	ACHIEVEMENT TEST SCORES OF SUMMER SCHOOL PUPILS	SYMONDS' ABILITY STANDARD SCORES	AMOUNT BY WHICH SUMMER GROUP EXCELS	
					Advanced	Repeat
Schorling-Sanford						
Geometry	Advance	125.3	30.7	27	+ 3.7	
	Repeat	123.1	30.0	26.5		+ 3.5
White Latin:						
Grade 9	Advance	124.4	100.8	80.9	+19.9	
	Repeat	100.4	95	53.6		+41.4
Grade 10	Advance					
	Repeat	126.1	115.6	101.5		+14.1
Grade 11	Advance	137.2	151.9	121.0	+30.9	
	Repeat	133.8	125.8	118.4		+ 7.4
American Council French:						
First Year	Advance	101.9	31	27.1	+ 3.9	
	Repeat	110.4	29	29.6		+ 0.6
Second Year	Advance	127.2	68	44.0	+24	
	Repeat	118.5	54.1	41.0		+14.1
Third Year	Advance	132.8	80.7	51.9	+28.8	
	Repeat	117.3	68.5	46.3		+22.2
Hotz Algebra:						
Problems	Advance	90.6	4.5	3.5	+ 1.0	
	Repeat	91.3	4.8	3.6		+ 1.2
Equation-Formula	Advance	82.2	7.2	5.4	+ 1.8	
	Repeat	92.1	8.2	6.1		+ 2.1
Ruch-Cossman Biology	Advance					
	Repeat	84.1	29.5	28.8		+ 0.7

ards we may find out what achievement score on December 1 this group should attain, and also on March 1. The scores on these two dates are found to be 12.3 and 20.3, respectively. One-half the difference between these two scores is 4, and this added to 12.3, the score on December 1, gives 16.3, the probable score a group with a median Terman score of 143.4 should receive on January 15. Table 13 gives for first term pupils the same information that Table 12 gives for second term pupils. All the differences here except one are in favor of the summer group. They range from .2 to 26.7. Again there are not enough group comparisons available to show whether the advanced group or the repeat group is superior.

The differences in Tables 12 and 13 show that the achievement of the summer high school groups is superior to that of regular academic pupils, but what the significance of these differences is cannot be determined without having more information than the ability standards furnish. In order to make a comparison that is statistically significant it is necessary to have groups that are of approximately the same intellectual make-up. Fortunately, the data which Symonds used in his study were available and could be procured. The writer used these data, and selected groups taking the same achievement tests as the summer groups, and picked them in such a way that their median Terman scores and their upper and lower quartiles were approximately the same. He first used in the selection all New York City pupils possible, and attempted to secure 100 cases for each group, but in some instances it was impossible to secure so large a number. Tables 14, 15, 16, and 17 give the character of the groups chosen. Tables 14 and 15 give in parentheses the probable score on January 15 figured in the manner already shown. A comparison of the median achievement scores of the summer groups and the regular academic groups thus selected is given in Tables 18, 19, 20, and 21. In two instances the median achievement of the two groups is exactly the same. In six cases varying from .1 to 2.8 the differences are in favor of the regular academic group. In twenty-three cases the differences are in favor of the summer group, and they vary from .1 to 45.2. There is enough data for these groups to show statistically what these differences signify. The purpose in selecting these groups was that this might be done.

TABLE 13

COMPARISON BETWEEN FIRST TERM SUMMER HIGH SCHOOL PUPILS' ACHIEVEMENT TEST SCORES AND SYMONDS' DECEMBER 1 ABILITY STANDARDS

NAME OF TEST	ADVANCE OR REPEAT	SUMMER SCHOOL PUPILS' INTELLIGENCE SCORE, CORRECTED TO OCTOBER 1	ACHIEVEMENT TEST SCORES OF SUMMER SCHOOL PUPILS AS OF JANUARY 15	SYMONDS' ABILITY STANDARD SCORES CORRECTED TO JANUARY 15	AMOUNT BY WHICH SUMMER GROUP EXCELS	
					Advanced	Repeat
Schorling-Sanford Geometry	Advance	143.4	16.5	16.3	+ 0.2	
	Repeat	113.4	16.1	11.9		+ 4.2
White Latin: Grade 9	Repeat	119.3	73.2	55.6		+17.6
Grade 10	Repeat	134.3	112.9	86.2		+26.7
Grade 11	Advance	154.8	145	119.6	+25.4	
	Repeat	148.6	140	114.6		+26.6
American Council French: First Year	Repeat	106.2	20.8	19.9		+ 0.9
Second Year	Advance	121.2	43	32.7	+10.3	
	Repeat	118.4	44	31.8		+12.2
Third Year	Advance	161.7	81	56.3	+24.7	
	Repeat	126.9	64	42.3		+21.7
Hotz Algebra: Problems	Advance	101.0	3.2	3.5	− 0.3	
Equation-Formula	Advance	101.3	5.5	4.2	+ 1.3	

In order to determine the significance of the difference it is necessary to find the probable error of the differences of the medians of the two groups by means of the formula which requires the probable error of the two medians. The following formula was used:

$$\text{P.E.}_{\text{diff.}} = \sqrt{\text{P.E.}^2_{(\text{Mdn}^1)} + \text{P.E.}^2_{(\text{Mdn}^2)}}$$

The probable error of a median is given by the formula:

$$\text{P.E.}_{(\text{Mdn})} = \frac{5}{4}\frac{Q}{\sqrt{N}}$$

TABLE 14

SUMMARY OF TEST RESULTS FOR REGULAR ACADEMIC PUPILS HAVING TERMAN SCORES EQUAL TO THE SUMMER SCHOOL FIRST TERM ADVANCED PUPILS

SUBJECT	NO. OF CASES	TERMAN MEDIAN	ACHIEVEMENT			
			Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	52	142.6	10.8 (14.8)	8.3	12.8	2.25
White Latin: Grade 11	80	153.9	117.8 (122.6)	65	147.5	41.25
American Council French:						
Second Year ...	36	121.3	38 (41.1)	25	50	12.5
Third Year	24	161.4	60 (63.4)	37.5	82.5	22.5
Hotz Algebra:						
Problems	100	101.3	3.6 (3.75)	2.6	4.9	1.15
Equation-Formula	100	101.3	4.8 (5.6)	2.9	5.7	1.4

TABLE 15

SUMMARY OF TEST RESULTS FOR REGULAR ACADEMIC PUPILS HAVING TERMAN SCORES EQUAL TO THE SUMMER SCHOOL FIRST TERM REPEAT PUPILS

SUBJECT	NO. OF CASES	TERMAN MEDIAN	ACHIEVEMENT			
			Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	100	113.2	9.6 (12.6)	7.2	13	2.9
White Latin:						
Grade 9	100	119.7	35.8 (42.8)	20	57.8	18.9
Grade 10	100	134.2	90.8 (98.4)	60	110.6	25.3
Grade 11	52	148.6	115.8 (121.4)	76.2	140	31.9
American Council French:						
First Year	80	107.5	18 (22.8)	11.2	22	5.4
Second Year ...	40	118.2	27.5 (30.6)	22.5	40.8	9.15
Third Year	24	125.6	57.5 (59.9)	45	77.5	16.25

TABLE 16

SUMMARY OF TEST RESULTS FOR REGULAR ACADEMIC PUPILS HAVING TERMAN SCORES EQUAL TO THE SUMMER SCHOOL SECOND TERM ADVANCED PUPILS

SUBJECT	NO. OF CASES	TERMAN MEDIAN	ACHIEVEMENT			
			Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	100	125	27.7	21.4	33	5.8
White Latin:						
Grade 9	100	123.3	75	60	100.8	20.4
Grade 11	64	137.5	106.7	68.3	135	33.35
American Council French:						
First Year	24	101.7	31	27	40	6.5
Second Year	76	127.5	52.5	43	67.1	12.05
Third Year	32	132.5	66.2	55	85	15
Hotz Algebra:						
Problems	100	90.8	4.4	3.4	6.0	1.3
Equation-Formula	100	83	7.3	6.0	8.4	1.2

TABLE 17

SUMMARY OF TEST RESULTS FOR REGULAR ACADEMIC PUPILS HAVING TERMAN SCORES EQUAL TO THE SUMMER SCHOOL SECOND TERM REPEAT PUPILS

SUBJECT	NO. OF CASES	TERMAN MEDIAN	ACHIEVEMENT			
			Med.	Q_1	Q_3	Q
Schorling-Sanford Geometry	100	123	26.6	20.3	32.8	6.25
White Latin:						
Grade 9	100	100	68.3	52.5	85	16.25
Grade 10	100	126.4	100.4	65	120	27.5
Grade 11	64	133.8	101.7	68.3	137.5	34.6
American Council French:						
First Year	100	110.8	33.1	28.9	40.7	5.9
Second Year	40	118.3	56.2	46.2	72.5	13.15
Third Year	16	115	60	45	75	15
Hotz Algebra:						
Problems	100	92.1	4.8	3.6	6.4	1.4
Equation-Formula	100	92.1	7.3	6.2.	8.4	1.1
Ruch-Cossman Biology	64	85	35.8	28.3	44	7.85

TABLE 18

DIFFERENCE IN MEDIANS IN ACHIEVEMENT BETWEEN SUMMER HIGH SCHOOL PUPILS AND PUPILS IN THE REGULAR ACADEMIC YEAR (FIRST TERM ADVANCED)

SUBJECT	SUMMER SCHOOL MEDIAN	REGULAR ACADEMIC MEDIAN	IN FAVOR OF SUMMER SESSION	IN FAVOR OF REGULAR ACADEMIC
Schorling-Sanford Geometry	16.5	14.8	1.7	
White Latin:				
Grade 11	145	122.6	22.4	
American Council French:				
Second Year	43	41.1	1.9	
Third Year	81	63.4	17.6	
Hotz Algebra:				
Problems	3.2	3.8		0.6
Equation-Formula	5.5	5.6		0.1

TABLE 19

DIFFERENCE IN MEDIANS IN ACHIEVEMENT BETWEEN SUMMER HIGH SCHOOL PUPILS AND PUPILS IN THE REGULAR ACADEMIC YEAR (FIRST TERM REPEAT)

SUBJECT	SUMMER SCHOOL MEDIAN	REGULAR ACADEMIC MEDIAN	IN FAVOR OF SUMMER SCHOOL	IN FAVOR OF REGULAR ACADEMIC
Schorling-Sanford Geometry	16.1	12.6	3.5	
White Latin:				
Grade 9	73.2	42.8	30.4	
Grade 10	112.9	98.4	14.5	
Grade 11	140	121.4	18.6	
American Council French:				
First Year	20.8	22.8		2.8
Second Year	44	30.6	13.4	
Third Year	64	59.9	4.1	

When the probable error of the difference betwen two medians is known, the next step is the calculation of the "critical ratio." It is defined as the difference between two averages or medians divided by the probable error of their difference. McGaughy says that the accepted standard for the undoubted significance of an

TABLE 20

DIFFERENCE IN MEDIANS IN ACHIEVEMENT BETWEEN SUMMER HIGH SCHOOL PUPILS AND PUPILS IN THE REGULAR ACADEMIC YEAR (SECOND TERM ADVANCED)

SUBJECT	SUMMER SCHOOL MEDIAN	REGULAR ACADEMIC MEDIAN	IN FAVOR OF SUMMER SCHOOL	IN FAVOR OF REGULAR ACADEMIC
Schorling-Sanford Geometry	30.7	27.7	3	
White Latin:				
Grade 9	100.8	75	25.8	
Grade 11	151.9	106.7	45.2	
American Council French:				
First Year	31	31		
Second Year	68	52.5	15.5	
Third Year	80.7	66.2	14.5	
Hotz Algebra:				
Problems	4.5	4.4	0.1	
Equation-Formula	7.2	7.3		0.1

TABLE 21

DIFFERENCE IN MEDIANS IN ACHIEVEMENT BETWEEN SUMMER HIGH SCHOOL PUPILS AND PUPILS IN THE REGULAR ACADEMIC YEAR (SECOND TERM REPEAT)

SUBJECT	SUMMER SCHOOL MEDIAN	REGULAR ACADEMIC MEDIAN	IN FAVOR OF SUMMER SCHOOL	IN FAVOR OF REGULAR ACADEMIC
Schorling-Sanford Geometry	30	26.6	3.4	
White Latin:				
Grade 9	95	68.3	26.7	
Grade 10	115.6	100.4	15.2	
Grade 11	125.8	101.7	24.1	
American Council French:				
First Year	29	33.1	4.1	
Second Year	54.1	56.2		2.1
Third Year	68.5	60	8.5	
Hotz Algebra:				
Problems	4.8	4.8		
Equation-Formula	8.2	7.3	0.9	
Ruch-Cossman Biology	29.5	35.8		6.3

obtained difference between the medians is that the difference shall be at least three times the probable error of that difference. When that difference is exactly three times its P. E. the chances are a trifle less than 1 to 45 that the true difference can be as small as zero.[9]

In order to find the critical ratios between the two groups which we have used it is necessary to know the following: (1) the number of cases; (2) the semi-interquartile range; and (3) the medians. Tables 6, 7, 8, and 9 give this information for the summer session groups tested; Tables 14, 15, 16, and 17 for the regular academic groups. The method used in selecting the regular academic groups has already been given. One illustration of how the critical ratio is determined is shown by the use of the Schorling-Sanford first term repeat groups. Table 7 gives the following information for the summer group, and Table 15 for the regular academic group:

	Number of Cases	Medians	Q
Summer Group	204	16.1	2.9
Regular Academic Group .	100	12.6	2.9

The difference in the medians is 3.5 in favor of the summer group. The P. E. of the difference and the critical ratio is calculated as follows:

$$\text{P.E.}_{\text{diff.}} = \sqrt{\left\{\frac{5}{4}\frac{(2.9)}{\sqrt{204}}\right\}^2 + \left\{\frac{5}{4}\frac{(2.9)}{\sqrt{52}}\right\}^2} = .441$$

$$\frac{3.5}{.44} = 7.9 \text{ (Critical Ratio)}$$

Tables 22, 23, 24, and 25 give a comparison of the medians in the groups, their differences, the probable error of these differences, and the critical ratios. In only three instances, that of French 1, and biology 1, second term repeat, and algebra problems, first term advanced, is there a significant difference in favor of the regular academic group. Nine differences are not significant for either group; 17 differences are in favor of the summer high school group. The repeat groups seem to excel

[9] McGaughy, J. R., *The Fiscal Administration of City School Systems.* The Macmillan Company, 1924, pp. 8, 9.

equally as well as the advanced groups. From a study of these tables it seems safe to draw the conclusion that the achievement in the summer high schools in New York City and Oswego, New York, is perhaps a little superior to the achievement during the regular academic year.

Correlation

Where the number of cases in the summer groups was approximately 30 or more, the Pearson coefficient of correlation between the achievement scores and scores on the Terman Group Test of Mental Ability was computed for both the summer groups and the regular academic groups which had been selected from Symonds' data. These coefficients are given in Tables 26 and 27. It is impossible to draw any conclusions from these tables because of their inconsistency. In eight cases the coefficients for the summer group are higher than those for the regular academic group; the remaining eight cases are in favor of the regular academic group.

TABLE 22

Probable Error of the Difference in the Medians and the Critical Ratios (Regular Academic Groups and First Term Advanced Summer School Groups)

Subject	Summer School Median	Regular Academic Median	Difference in Median	P. E. Difference	Critical Ratio	
					In Favor of Summer School	In Favor of Regular Academic
Schorling - Sanford Geometry	16.5	14.8	1.7	1.3	1.3	
White Latin: Grade 11	145	122.6	22.4	7.4	3.0	
American Council French:						
Second Year ...	43	41.1	1.9	3.6	.5	
Third Year	81	63.4	17.6	5.9	2.9	
Hotz Algebra:						
Problems	3.2	3.8	0.6	0.2		3.0
Equation-Formula	5.5	5.6	0.1	0.3		0.3

TABLE 23

PROBABLE ERROR OF THE DIFFERENCE IN THE MEDIANS AND THE CRITICAL RATIOS (REGULAR ACADEMIC GROUPS AND FIRST TERM REPEAT SUMMER SCHOOL GROUPS)

SUBJECT	SUMMER SCHOOL MEDIAN	REGULAR ACADEMIC MEDIAN	DIFFERENCE IN MEDIANS	P. E. DIFFERENCE	CRITICAL RATIOS	
					In Favor of Summer School	In Favor of Regular Academic
Schorling - Sanford Geometry	16.1	12.6	3.5	.44	7.9	
White Latin:						
Grade 9	73.2	42.8	30.4	3.6	8.4	
Grade 10	112.9	98.4	14.5	4.5	3.2	
Grade 11	140	121.4	18.6	6.4	2.9	
American Council French:						
First Year	20.8	22.8	2.0	1.1		1.8
Second Year ...	44	30.6	13.4	1.9	7.0	
Third Year	64	59.9	4.1	4.3	.9	

TABLE 24

PROBABLE ERROR OF THE DIFFERENCE IN THE MEDIANS AND THE CRITICAL RATIOS (REGULAR ACADEMIC GROUPS AND SECOND TERM ADVANCED SUMMER SCHOOL GROUPS)

SUBJECT	SUMMER SCHOOL MEDIAN	REGULAR ACADEMIC MEDIAN	DIFFERENCE IN MEDIANS	P. E. DIFFERENCE	CRITICAL RATIO	
					In Favor of Summer School	In Favor of Regular Academic
Schorling - Sanford Geometry	30.7	27.7	3.0	.9	3.2	
White Latin:						
Grade 9	100.8	75	25.8	4.2	6.1	
Grade 11	151.9	106.7	45.2	5.8	7.7	
American Council French:						
First Year	31	31				
Second Year ...	68	52.5	15.5	2.9	5.3	
Third Year	80.7	66.2	14.5	4.1	3.5	
Hotz Algebra:						
Problems	4.5	4.4	.1	.3	.3	
Equation-Formula	7.2	7.3	.1	.4		.2

TABLE 25

PROBABLE ERROR OF THE DIFFERENCE IN THE MEDIANS AND THE CRITICAL RATIOS (REGULAR ACADEMIC GROUPS AND SECOND TERM REPEAT SUMMER SCHOOL GROUPS)

SUBJECT	SUMMER SCHOOL MEDIAN	REGULAR ACADEMIC MEDIAN	DIFFERENCE IN MEDIANS	P. E. DIFFERENCE	CRITICAL RATIO	
					In Favor of Summer School	In Favor of Regular Academic
Schorling - Sanford Geometry	30.0	26.6	3.4	.8	4.2	
White Latin:						
Grade 9	95	68.3	26.7	2.8	9.5	
Grade 10	115.6	100.4	15.2	4.1	3.7	
Grade 11	125.8	101.7	24.1	6.3	3.8	
American Council French:						
First Year	29	33.1	4.1	1.1		3.7
Second Year ...	54.1	56.2	2.1	2.6		.8
Third Year	68.5	60	8.5	5.9	1.4	
Hotz Algebra:						
Problems	4.8	4.8				
Equation-Formula	8.2	7.3	.9	.3	3.0	
Ruch-Cossman Biology	29.5	35.8	6.3	1.8		3.5

TABLE 26

CORRELATION BETWEEN ACHIEVEMENT TESTS AND TERMAN GROUP TEST OF MENTAL ABILITY (SUMMER SCHOOL GROUP)

TEST	FIRST TERM ADVANCE	FIRST TERM REPEAT	SECOND TERM ADVANCE	SECOND TERM REPEAT
Schorling-Sanford Geometry		.27	.24	.47
White Latin:				
Grade 9		.34		.50
Grade 10		.33		.29
American Council French:				
First Year		.14		.25
Second Year		.35	.26	.12
Hotz Algebra:				
Problems	.59			.28
Equation-Formula	.37			.20

TABLE 27

CORRELATION BETWEEN ACHIEVEMENT TESTS AND TERMAN GROUP TEST OF MENTAL ABILITY (REGULAR ACADEMIC PUPILS)

TEST	FIRST TERM ADVANCE	FIRST TERM REPEAT	SECOND TERM ADVANCE	SECOND TERM REPEAT
Schorling-Sanford Geometry		.38	.70	.74
White Latin:				
Grade 9		.14		.53
Grade 10		.46		.46
American Council French:				
First Year		.01		.24
Second Year		.06	.41	.76
Hotz Algebra:				
Problems	.32			.10
Equation-Formula	.30			.19

SUMMARY AND CONCLUSIONS

The per cent of summer high school pupils passing the regents examinations at the close of the summer school is somewhat lower than the number of pupils passing the same type of examinations at the close of each term during the academic year. These standards, however, are subjective, and valid comparisons cannot be made.

In order to make a comparison which would be objective, a total of five achievement tests were given in the Oswego and the Washington Irving High Schools. Twenty-four per cent of the 1,525 tested were taking the work for the first time. The summer groups had lower Terman scores than similar groups previously studied by Symonds. Their achievement scores, on the other hand, were much higher than similar scores for his groups.

That the writer might discover the significance in the differences between the regular academic groups and the summer groups, groups of regular academic pupils who had already tried these same achievement tests were selected, and each group was equated with a similar summer group on the basis of median scores, and upper and lower quartiles on the Terman tests. From these groups critical ratios were found, some in favor of

the summer group, and others in favor of the regular academic group; the majority, however, were in favor of the summer high school groups. The conclusion was drawn that the summer groups were superior in achievement.

It is rather difficult to make a satisfactory explanation to account for this superiority, but the writer has been bold enough to hazard certain opinions. In the first place, summer work is intensive. In the Oswego and the Washington Irving High Schools, the two schools studied, the sessions were for 36 and 40 days, respectively. The periods were 60 minutes long in Oswego, and 80 minutes long in New York City. Pupils were urged to take not more than one subject, and were not allowed to take more than two subjects. Intensive effort was made to complete the one or two subjects. In the high schools during the academic year pupils are allowed four or more subjects, periods are from 40 to 45 minutes long, and their efforts are spread over a wider field.

In the second place, summer work is adapted more to the individual. Instead of the usual 40- or 45-minute period devoted to recitation only, summer school pupils are given a longer period, and approximately one-half of this is given to supervised study with the same class teacher. The work to be undertaken is adapted by means of the supervised study period to the individual's ability.

In the third place, the handicap of a shorter summer session is perhaps greatly overbalanced by the fact that pupils are in summer school with a purpose. Attendance is entirely voluntary. Pupils are either anxious to make up for failure or to do advanced work that they may advance themselves in the succeeding year. The fact that they are in school with a purpose can account for a great deal.

A fourth reason, although not so strong a one, might also be advanced. There are no extra-school organizations in the summer session. There are no club programs, no assemblies, or other diversions. Pupils are in school with an undivided purpose, and their full attention is given to their academic preparation. The writer is aware, however, that this point has not been proved. It is advanced merely as an opinion and has no authority for its support. These four reasons: (1) more intensive work; (2) better adaptation of the work to the summer groups; (3)

attendance voluntary and with a purpose, and (4) lack of extra diversions, are, no doubt, with the possible exception of reason (4), very potent ones in the improving of the quality of the work in the summer school.

CHAPTER V

ABILITY OF SUMMER HIGH SCHOOL PUPILS TO DO ADVANCED STUDY FOLLOWING THEIR WORK IN THE SUMMER SCHOOL

We have already seen that the summer school pupils' achievement is superior to that of pupils in the regular academic year. Chapter IV attempted to account for this difference. It may be one thing, however, to succeed in the summer school under its peculiar conditions, but quite another thing to maintain the success during the academic year under different conditions. One question may well be asked: How do these pupils promoted as a result of their work in the summer high school compare with non-summer high school pupils when they come to the next promotion period?

We will now turn to a study of the sustaining ability of these pupils who took the achievement tests in summer school and who were promoted to advanced work, to see how they compare with groups of non-summer school pupils taking the same work with them during the regular academic year. By sustaining ability is meant the ability a promoted pupil has for continuing acceptable work in the advanced term of the same subject in which he has received promotion. In this study, our particular interest is the ability which a pupil, promoted in the summer school, has for continuing acceptable work in the advanced regular academic term in the particular subject in which he received promotion at the close of the summer session. For example, it attempts to answer such a specific question as this: How does a group of pupils, who successfully completed the first term of plane geometry in summer school, compare with another group, who successfully completed the first term of plane geometry during the academic year, in their ability to complete successfully the second term of plane geometry during the succeeding academic term?

After two years of state supervision of the summer high schools, the assistant commissioner of education in the State of New York in charge of secondary education, in 1927, said:

> The summer high schools and their work are still in the experimental stage. The true test will come when we can compile figures which will show how well these pupils maintain themselves in their academic work when they return to the regular day high school.[1]

Previous Studies

No study of just this kind has been made. Bush, in a doctor's dissertation earlier reported here, compared the work of 200 summer high school and 200 non-summer high school pupils in a certain school in Illinois during the fall and spring semesters of 1926. He did not attempt to study ability in specific subjects. The two criteria used were teachers' marks, and a "success ratio" determined by the number of subjects successfully completed by the pupils. If a pupil taking four subjects failed in three of them during the semester, his success ratio would have been 25 per cent; if he failed in two of them his success ratio would have been 50 per cent. He found that while both groups had the same grades during the spring semester, the summer group was superior in the success ratio. In the fall semester the situation was slightly reversed. He concluded that the non-summer group seemed to have a slight advantage.[2]

In the spring semester of 1927, the New York City school authorities made a check-up of the ability of summer high school pupils to maintain themselves in advanced work in their home schools during the fall semester of 1926. Their study was simply to determine whether such pupils passed or failed in their advanced work. In order to make this check-up the summer schools issued to each pupil a certificate for each subject successfully completed in the 1926 summer session. These certificates were presented to the principals of their home schools upon registration in the fall. The principals returned all such cards to the director of the summer session after the close of the final examination for the fall semester, and indicated thereon whether such pupil had passed or failed. It was found that 76 per cent of these pupils successfully completed their advanced work.[3]

[1] *Twenty-Third Annual Report,* University of the State of New York, Education Department, 1927, Vol. 1, p. 50.
[2] Bush, R. H., *The Status of the Summer School in the Secondary Schools of Illinois,* State Superintendent of Public Instruction, Springfield, Ill., pp. 49-54.
[3] *Twenty-Ninth Annual Report,* Superintendent of Schools, New York City, 1927, p. 211.

Just what this 76 per cent means it is not possible to say without knowing what non-summer school groups did in the same subjects.

The Present Study

The writer has attempted to make a comparison between the two groups by finding the significance of the differences between the scores of summer school pupils and non-summer school pupils in the advanced work of all those subjects taught in the high school into which the summer school pupils had been promoted as a result of their work there. The criterion used was teachers' marks. It was first intended to repeat the achievement tests at the close of the 1927 fall semester, but it was found that the pupils were scattered so widely in their home schools, with so few in any subject in any school, that to attempt to carry out this plan would have been impracticable. The use of teachers' marks had one advantage. All the pupils continuing with the work, the earlier terms of which they had completed in the summer school, could be studied.

A great many attacks have been made upon the reliability of teachers' marks, yet they continue to occupy an important place. They are still considered important in judging success or failure in most of our schools. They determine eligibility for participation in extra-school functions, such as athletics, and fitness for receiving rewards and scholarships, and often, admittance to college. An important criterion used in the construction of many new type tests is that of teachers' marks.[4] Ross found that the correlation between grade school record and high school achievement was high enough to be significant.[5] Wood found that the correlation between regents examinations and freshman grades in college was .57, only 2 points below that between the psychological examination and freshman grades.[6] Six of the comparisons used later in the tables show that regents marks were the criteria.

Teachers' marks covering a term's work cannot be as unreliable as a teacher's mark on a single test paper or on a single

[4] Haggerty, M. E., *Manual of Directions for Delta 1 and Delta 2.* World Book Co., Yonkers-on-Hudson, N. Y., p. 52.
Miller, W. S., *Manual of Directions, Mental Ability Tests.* World Book Co., Yonkers-on-Hudson, N. Y., p. 20.

[5] Ross, C. C., *The Relation Between Grade School Record and High School Achievement.* Teachers College, Columbia University, Contribution to Education, No. 166, 1925, p. 69.

[6] Wood, B. D., *Measurement in Higher Education.* World Book Co., Yonkers-on-Hudson, New York, 1923, p. 86.

estimate of a pupil's ability. On a single paper or on a single estimate, there is more of an absolute value to be considered. In the estimate for a term's work, the relative value enters in, and teachers are fairly well able to judge the members of their classes.

The Data

In collecting the data for this portion of the study, it was necessary for the writer to follow up the promoted summer school pupils in their home schools. Nine of the high schools which had large numbers of pupils attending the Washington Irving Summer High School he visited personally, and in each of them spent approximately one and one-half days. The high schools visited were: Bryant, Cathedral, DeWitt Clinton, Julia Richman, New Utrecht, Seward Park, Stuyvesant, Wadleigh, and Washington Irving. In all of them he secured the January 1928 mid-term promotion marks for all summer school pupils who had just finished advanced work in the same subjects, the earlier terms of which had been completed in the summer school, and also a distribution of marks for all pupils, both summer school and non-summer school in those same subjects. He was able to follow up only a portion of the 1,525 who had taken the August 1927 achievement tests. Some either had failed their summer school work or had not continued with the subjects in which they had taken the achievement tests; some had left school before January 1928, and others had remained in school but had dropped the subject after a short time. Complete reports from the Oswego High School were forwarded by the principal. All the other schools had had but comparatively few pupils attending the Washington Irving Summer High School, and to these was sent a typewritten list of the pupils' names together with the subject which each one was probably continuing during the fall semester, and these schools were asked to indicate after each name the mark received by the pupil in that subject in the January promotions.

The distribution of marks used was as given in the following figures:

95-100	65-74
85- 94	55-64
75- 84	0-54

This distribution was suggested by the fact that the New York City high school principals use it in making final reports to the Board of Education for the regents examinations. Class intervals of five would perhaps have been more desirable, and the writer had earlier attempted to collect the marks in this manner, but he soon discovered that a more complete return would be received with the above distribution since in many cases the distribution could be taken directly from the regents reports. In some cases teachers had lost their final first semester class sheets or had earlier destroyed them, and by using this distribution it was possible to secure complete returns for all regents examinations. In all subjects not covered by regents examinations teachers' class reports had to be used.

Table 28 gives a record of the number of pupils promoted at the end of the summer session. The second column indicates all those whom it would have been possible to follow up had they continued with the same subject.

TABLE 28

PROMOTION RESULTS FOR 1927 SUMMER HIGH SCHOOL EXAMINATIONS

SUBJECT	NO. TESTED	NO. PASSED	PER CENT PASSED
Geometry 1–1	219	140	64%
Geometry 1–2	322	273	85
Latin 1–1	43	33	77
Latin 1–2	75	59	79
Latin 2–1	30	29	97
Latin 2–2	59	30	51
Latin 3–1	32	17	53
Latin 3–2	36	14	39
French 1–1	57	50	88
French 1–2	98	69	74
French 2–1	111	97	87
French 2–2	149	131	88
French 3–1	36	34	94
French 3–2	35	29	83
Algebra 1–1 Problems	52	36	68
Algebra 1–1 Equation-Formula	54	36	67
Algebra 1–2 Problems	44	32	69
Algebra 1–2 Equation-Formula	48	32	67
Biology 1–2	25	14	56
Total	1,525	1,155	75%

Table 29 gives a comparison between summer high school pupils' success in advanced subjects with the success of other academic pupils in those subjects. Columns 1 and 6 give the respective numbers of summer school and non-summer school pupils upon which the study of the sustaining ability is based. The Oswego algebra report had to be thrown out because it was

TABLE 29

COMPARISON BETWEEN SUMMER SCHOOL PUPILS' SUCCESS IN ADVANCED SUBJECTS WITH SUCCESS OF OTHER ADVANCED PUPILS IN THESE SUBJECTS

SUBJECT	SUMMER SCHOOL PUPILS					NON-SUMMER SCHOOL PUPILS				
	N	Med.	Q_1	Q_3	*Q*	*N*	Med.	Q_1	Q_3	*Q*
Latin:										
First Year, Second Term	16	68.3	44.0	75.0	15.5	1005	71.1	65.3	79.3	7.0
Second Year, First Term	40	69.2	62.5	74.5	5.99	1079	71.2	65.8	78.7	6.45
Second Year, Second Term (Regents)	10	79.0	72.5	84.0	5.75	646	78.8	71.4	84.7	6.6
Second Year, Second Term (School)	10	67.8	63.3	71.4	4.05	465	72.6	66.7	81.9	7.6
Third Year, First Term	15	68.6	61.9	73.9	6.03	379	71.8	66.4	79.6	6.6
Third Year, Second Term (Regents)	13	76.2	70.4	84.4	6.95	305	74.3	67.1	81.9	7.4
French:										
First Year, Second Term	29	66.5	39.9	73.8	16.95	1440	71.0	65.3	78.5	6.5
Second Year, First Term	36	67.7	55	73.7	9.35	2449	70.8	65.6	77.4	5.9
Second Year, Second Term (Regents)	22	70.7	60	78.6	9.3	658	81.8	76.3	88.3	6.25
Second Year, Second Term (School)	44	61.6	50.4	69.3	9.4	1625	70.7	65.3	77.6	6.15
Third Year, First Term	60	68.8	61.2	73.6	6.2	1373	72.1	67.1	79.1	6.0
Third Year, Second Term (Regents)	20	69.4	61.7	75.0	6.6	953	79.4	72.9	85.0	6.05
Elem. Algebra Second Term (Regents)*	19	78.0	71.4	85.8	7.2	126	70.6	60.2	78.3	9.05
Plane Geometry, Second Term (Regents)	91	85.2	71.7	92.3	10.3	3097	86.2	76.4	95.6	9.6

*Results here are perhaps in error, because of Oswego school reports failing to list failures.

impossible to secure a distribution for pupils who had failed their algebra. No record had been kept of these failures in the high school permanent records, and hence an exact record of only the successful pupils was possible to be obtained. Because of the small number of pupils which the writer was able to follow up—425—the results are not as reliable as could be wished.

Table 30 gives the information slightly more condensed and also indicates the difference in the medians. Only three of these, ranging from .2 to 1.9 are in favor of the summer school groups. Ten of these differences, ranging from 2.0 to 11.1 are in favor of the non-summer school group.

TABLE 30

DIFFERENCE IN MEDIANS BETWEEN SUMMER HIGH SCHOOL PUPILS' FINAL MARKS IN ADVANCED CLASSES AND THOSE OF NON-SUMMER SCHOOL PUPILS

SUBJECT	SUMMER SCHOOL PUPILS			NON-SUMMER SCHOOL PUPILS			DIFFERENCE IN MEDIANS IN FAVOR OF REGULAR ACADEMIC PUPILS
	N	Med.	*Q*	*N*	Med.	*Q*	
Latin:							
First Year, Second Term	16	68.3	15.5	1005	71.1	7.0	2.8
Second Year, First Term	40	69.2	5.99	1079	71.2	6.45	2.0
Second Year, Second Term (Regents)	10	79.0	5.75	646	78.8	6.6	− 0.2
Second Year, Second Term (School)	10	67.8	4.05	465	72.6	7.6	4.8
Third Year, First Term	15	68.6	6.03	379	71.8	6.6	3.2
Third Year, Second Term (Regents)	13	76.2	6.95	305	74.3	7.4	− 1.9
French:							
First Year, Second Term	29	66.5	16.95	1440	71.0	6.5	4.5
Second Year, First Term	36	67.7	9.35	2449	70.8	5.9	3.1
Second Year, Second Term (Regents)	22	70.7	9.3	658	81.8	6.25	11.1
Second Year, Second Term (School)	44	61.6	9.4	1625	70.7	6.15	9.1
Third Year, First Term	60	68.8	6.2	1373	72.1	6.0	3.3
Third Year, Second Term (Regents)	20	69.4	6.6	953	79.4	6.05	10.0
Plane Geometry:							
Second Term (Regents)	91	85.2	10.3	3097	86.2	9.6	− 1.0

Table 31 gives the probable error of the difference in the medians and the critical ratios of the two groups. The method

used in finding these has already been discussed in Chapter IV. Only five of these cases have critical ratios of approximately 3 or over, and hence they are the only ones that are significant. These are all in favor of the non-summer school group.

TABLE 31

PROBABLE ERROR OF THE DIFFERENCE IN THE MEDIANS AND THE CRITICAL RATIOS (NON-SUMMER SCHOOL AND SUMMER SCHOOL GROUPS IN ADVANCED WORK)

SUBJECT	DIFFERENCE IN MEDIANS IN FAVOR OF SUMMER SCHOOL GROUPS	DIFFERENCE IN MEDIANS IN FAVOR OF NON-SUMMER SCHOOL GROUPS	P. E. DIFFERENCE	CRITICAL RATIO
Geometry 1–2	1.0		1.3	.7
Latin 1–2		2.8	4.8	.5
Latin 2–1		2.0	1.2	1.6
Latin (Regents) 2–2	.2		2.2	.08
Latin (School) 2–2		4.8	1.6	2.8
Latin 3–1		3.2	1.9	1.6
Latin (Regents) 3–2	1.9		2.4	.7
French 1–2		4.5	3.9	1.1
French 2–1		3.1	1.9	1.5
French (Regents) 2–2		11.1	2.4	4.4
French (School) 2–2		9.1	1.7	5.1
French 3–1		3.3	1.0	3.2
French (Regents) 3–2		10.0	1.8	5.3

Owing to the small number of cases the writer was able to follow up, the probable error of the difference is much larger than it would have been otherwise, and hence the critical ratios should really be much larger than they are shown here to be. This study indicates a superiority in favor of the non-summer school group, and shows that summer high school pupils do not sustain themselves in advanced work as well as do regular academic pupils who do not attend summer high school.

How are we to account for the fact that summer high school pupils in the summer school rank higher in achievement than do regular academic pupils during the regular academic year, but lower in sustaining ability in the new work to which they have been promoted as a result of their summer's work? This may be accounted for in various ways.

In the first place, in comparing the two groups in Chapter IV,

it was noted that the summer groups had lower intelligence judged by their scores on the Terman tests than regular academic pupils, and, before we could make a significant comparison there, it was necessary to select particular groups of regular academic pupils equated with them on the basis of their Terman scores. It was on this basis that the earlier significant differences were shown. When it comes to a study of the sustaining ability, there are not enough pupils in a particular term of a subject to make this equating of groups feasible.

In the second place, it may be that conditions during the regular academic year are not so well adapted to the abilities of the summer school pupils as are the conditions during the summer session, where, under supervised study, and intensive work in one or possibly two subjects, pupils excelled in achievement.

Summary and Conclusions

Summer high school pupils were followed into their succeeding terms' work in the regular academic year in order to discover how they compared in sustaining ability with non-summer school pupils in the same classes. It was discovered that although the summer school pupils excelled other regular academic pupils in achievement during the time they were in summer school, they were below the non-summer school groups in their sustaining ability during the regular academic year.

These differences have been accounted for by the fact that when the summer school groups were compared for achievement with the non-summer school groups, both groups were equated on the basis of Terman scores. It had earlier been discovered that the summer groups had much lower Terman scores than similar groups who had taken the same tests during the regular academic year. In comparing the groups for sustaining ability, this equating of groups was not possible, and the summer school group—a group with lower intelligence—is being compared with a non-summer group, a group of higher intelligence.

CHAPTER VI

SUMMER HIGH SCHOOL PUPIL PERSONNEL

In Chapter III it was stated that the justifications for the summer high schools cannot be based solely upon the quality of work which they do, especially if judged by its approximation to academic standards held during the regular school year, and that they might be performing a service to the community of far greater importance. It was also stated that the quality of the work must be considered with respect to the quality of the raw material. The present chapter is a study of the raw material—the pupil personnel.

It has been shown in an earlier chapter that the summer high school enrollment has grown very rapidly, and that special impetus has been given to this growth in New York State by reason of the education department's recognition and supervision. In this chapter we shall study the character of the enrollment in one of these summer high schools—the Washington Irving High School. Reasons have already been given in Chapter III for the selection of this school. Conclusions drawn from this study, although they may not be directly applicable to all summer high schools, should apply substantially for the larger cities, and it is in the larger cities that the summer high school has had its most pronounced growth.

This part of the study is based, for the most part, on questionnaires, over 4,000 of which were printed and distributed among the pupils on the last day of the 1927 summer session. It was desired to study only 10 per cent of the enrollment, but it was found impossible to make sure of securing a representative sampling without supplying each pupil with a questionnaire and making the selection afterward. There were no home rooms or other system of organization to be used as a basis of sampling. The suggestion was offered, of distributing the blanks during one of the class periods, but there would have been no way of

determining just how random and representative such a sampling would have been.

Every pupil on the last day filled out a blank. These were then arranged in strictly alphabetical order, and every tenth one selected. Principal Stockton had earlier explained in a mimeographed bulletin full directions for filling out the blanks. The total number of questionnaires selected for the study was 410: 207 boys and 203 girls.

Enrollment in New York City Summer High Schools

New York City established its first summer high school in 1920 in the Washington Irving High School Building, in 1922 a second school, and in 1923 a third school. In 1925, the first year of state supervision, it had four such schools with an enrollment of 12,787.[1] This was 11.3 per cent of the number of high school pupils as reported in the average daily register for the preceding academic year.[2]

In 1926 the summer high school enrollment rose to 17,685,[3] which was 14.4 per cent of the number on the average daily register for 1925-1926.[4] In 1927 there were seven summer high schools with a total enrollment of 22,759,[5] which was 17.3 per cent of the average daily register for 1926-1927.[6] This information is summarized in Table 32. It shows that the summer session is extending its services to larger and larger groups and that the enrollment of the boys is increasing much more rapidly than the enrollment of the girls.

TABLE 32

Enrollment in New York City Summer High Schools for 1925, 1926, 1927

Year	Boys	Girls	Total	Per Cent Increase Over Previous Year	Public High School Average Daily Register	Per Cent of High School Enrollment
1925	6,665	6,119	12,784		113,538	11.3%
1926	9,064	8,621	17,685	38.3%	125,201	14.0
1927	12,070	10,689	22,759	28.7	131,038	17.3

[1] *Twenty-Eighth Annual Report,* Superintendent of Schools, New York City, p. 740.
[2] *Op. cit.,* p. 654.
[3] *Op. cit.,* p. 740.
[4] *Op. cit.,* p. 654.
[5] *Twenty-Ninth Annual Report,* Superintendent of Schools, New York City, p. 742.
[6] *Op. cit.,* p. 655.

Study of Pupil Personnel

Table 33 shows the class distribution of the 410 pupils studied. These classes are the official classes in which the pupils were registered in their home schools the preceding term. Table 34 gives the same data for the regular academic year in all the high schools in New York City for September 30, 1926.[7] The

TABLE 33

Selection of Pupils by Classes Attending Summer High School for 1927

Class	Boys	Girls	Total	Per Cent of Total
Freshman	30	23	53	12.9%
Sophomore	68	69	137	33.4
Junior	61	79	140	34.1
Senior	48	32	80	19.5
Total	207	203	410	

TABLE 34

Selection of Pupils by Classes Attending Regular Academic Year

Class	Boys	Girls	Total	Per Cent of Total
Freshman	22,848	21,446	44,294	32.6%
Sophomore	23,003	21,743	44,746	33.6
Junior	13,498	13,331	26,829	19.6
Senior	9,878	9,564	19,442	14.2
Total	69,227	66,084	135,311	

smallest registration in the summer session is in the freshman year. This is to be expected because these pupils had not entered the high school until the preceding September or perhaps February. They had not been in high school long enough to have gotten so far behind in their schedules as to feel the need of making up their work in the summer session. Some of them may also have attended the summer junior high school. This, however, would not account for many pupils since the average

[7] *Twenty-Ninth Annual Report*, Superintendent of Schools, New York City, pp. 665, 666.

daily register for the 1927 summer junior high school was only 1,874 for the entire city.[8]

A small enrollment during the senior year would be expected, since the senior class during the regular academic year is only 14.2 per cent of the total enrollment. A summer enrollment of 19.5 per cent should be considered abnormally high, when we take into account the fact that these pupils represent approximately one-half of the senior class of the previous year. About one-half of the senior class must have completed their courses the preceding June. In New York City there are two graduating classes each year; one in February, the other in June. As a rule, the June class represents more than one-half of the senior enrollment. It is evident here that the freshmen, sophomores, juniors and seniors take increasing advantage of the summer opportunity as they advance through their high school courses.

Retardation

The amount of retardation in the summer session is shown in Table 35.

TABLE 35

Number and Per Cent of Summer High School Pupils Retarded One or More Terms

Classes	Boys			Girls			Total		
	Total No.	No. Retarded	Per Cent Retarded	Total No.	No. Retarded	Per Cent Retarded	No.	Retarded	Per Cent
Freshman	30	10	33.3%	23	5	21.7%	53	15	28.3%
Sophomore	68	13	19.1	69	13	18.8	137	26	18.9
Junior	61	16	26.2	79	19	24.0	140	35	25.0
Senior	48	10	20.8	32	3	9.3	80	13	16.2
Total	207	49	23.6	203	40	19.7	410	89	21.7

Nearly 22 per cent have failed enough work to be considered retarded. A pupil is considered retarded only when he has failed enough work to have a lower grade classification than his date of entrance and normal progress in school would indicate he

[8] *Op. cit.*, p. 741.

should have. The greatest amount of retardation is in the freshman group where nearly 30 per cent are retarded. This is rather difficult to account for, unless it may be accounted for by the fact that these pupils have not had the advantage of previous summer sessions to make up for their failures, and that a failure of one subject in the freshman year would cause greater retardation than a failure of two or three in the junior or senior year would cause. This study has considered retardation prior to June 1927. Had the retardation caused also by the failures in the June examinations been taken into account, these figures would undoubtedly have been much higher. If all this had been considered, there is a possibility that the number retarded might have been fully one-third of the entire summer enrollment.

Repeat and Advanced Work

Table 36 gives the numbers of pupils who are attending summer school to make up for work previously failed or who wish to advance in their school courses by taking new subjects. Twenty-four per cent of the pupils are taking advanced work only. It is interesting to note that this is the same proportion of pupils taking advanced work in the achievement tests earlier reported here.

Fifteen per cent of the pupils are taking both advanced and repeat work. Sixty-one per cent are taking repeat work only. It is probable that one-half of the subjects of the 15 per cent who are taking both advanced and repeat work are repeat subjects, and on that basis it is safe to say that nearly 70 per cent of the entire summer school enrollment represents pupils who wish to make up for previous failures.

Bush found that the number in the summer high schools of Illinois who had previously failed ranged from 10 per cent in one school to 100 per cent in another school, with a median between 50 and 60 per cent.[9]

Jones found that in Indiana 22.2 per cent of the pupils enrolled had done so to make up for failure.[10] The large proportion of pupils repeating their work corresponds very nearly to that of the entire state. The statistics for the summer high

[9] Bush, R. H., *The Status of the Summer Schools in the Secondary Schools of Illinois.* Issued by the State Superintendent of Public Instruction, Springfield, Ill., p. 36.

[10] Jones, J. W., "High School Summer Work in Indiana," *Bulletin of the School of Education,* Indiana University, Bloomington, Ind., Vol. 11, No. 2, p. 44.

TABLE 36

NUMBER AND PER CENT OF WASHINGTON IRVING SUMMER HIGH SCHOOL PUPILS TAKING REPEAT OR ADVANCED SUBJECTS, OR BOTH

CLASS	REPEAT	ADVANCED	BOTH	PER CENT REPEAT	PER CENT ADVANCED	PER CENT BOTH
Freshman	35	13	5	66.0%	24.5%	9.4%
Sophomore	93	27	17	67.8	19.7	12.4
Junior	80	42	18	57.1	30.0	12.8
Senior	40	18	22	50	22.0	27.5
Total	248	100	62	60.4%	24%	15%

schools for the State of New York show that during the 1926 summer session the per cent of advance registration, i.e., the per cent of pupils taking work other than that they had previously failed, ranged from 2 per cent in two schools to 66⅔ per cent in one school. The median for the advanced registration for that year in all the schools was 30 per cent.[11]

PUPILS ATTENDING SUMMER HIGH SCHOOL PREVIOUSLY

Table 37 shows that 129 or 31 per cent of the pupils in this study had attended summer high school previously. It would appear from this that about one-third of the summer school enrollment is recruited each year from pupils who have attended before. These pupils may represent repeated failures. A great many of these would, no doubt, become discouraged and leave high school were it necessary for them to take a term each year to make up for failures, and thus lose one-half a year's work. The summer school for these pupils is an encouragement to continue and to graduate.

REGISTRATION BY CURRICULA

The curricula in the regular academic year that summer high school pupils are pursuing are given in Table 38. Over 80 per cent are registered in the general or academic curriculum. This curriculum contains the greatest proportion of those in the academic year who are planning to enter college. The proportion

[11] *Twenty-Third Annual Report*, University of the State of New York, Education Department, Vol. I, p. 192.

in the summer school corresponds very closely to that in the regular school year. The statistical report of the New York City Superintendent of Schools for the year 1926-27, reported 79.2 per cent of the graduating class enrolled in this curriculum.[12]

TABLE 37

PUPILS ATTENDING WASHINGTON IRVING SUMMER HIGH SCHOOL WHO ATTENDED SUMMER HIGH SCHOOL PREVIOUS TO 1927

CLASS	BOYS	GIRLS	TOTAL
Freshman	5	2	7
Sophomore	16	10	26
Junior	23	35	58
Senior	25	13	38
Total	69	60	129

TABLE 38

CURRICULA PURSUED BY SUMMER HIGH SCHOOL PUPILS

CURRICULA	BOYS AND GIRLS					
	Freshmen	Sophomores	Juniors	Seniors	Total	Per Cent
General or Academic	47	106	108	69	330	80.4%
Commercial	4	26	25	3	58	14.1
Art	0	1	0	0	1	.2
Vocational	2	4	7	8	21	5.1
Total	53	137	140	80	410	99.8

However, a comparison between a summer school group representing all classes, and a graduating class, is not an entirely valid one. In the latter case a selective factor has been at work for four years which must have somewhat affected the group. A comparison should be made with all the pupils taking those curricula during the regular academic year. The report of the New York City Board of Education referred to does not give these data.

[12] *Twenty-Ninth Annual Report*, Superintendent of Schools, New York City, p. 678.

Pupils Expecting to Enter College

Perhaps some idea of the type of pupils that attend the summer high school may be had from a knowledge of whether or not they expect to go to college. Table 39 gives the per cent of summer pupils in each class who stated that they expected to enter college. A great many of those in the freshman and sophomore classes were no doubt expressing mere wishes, nevertheless, a glance at this table will show that the majority of the pupils have an ambition. Over one-half of the girls and over three-fourths of the boys expect to go to college.

TABLE 39

Per Cent of Summer High School Pupils Who Expect to Go to College

Class	Per Cent	
	Boys	Girls
Freshman	83.3	56.5
Sophomore	85.2	51.5
Junior	77	51.8
Senior	91.6	59.3

Mental Tests

Chapter IV has given a comparison of the scores on the Terman Group Test of Mental Ability of the summer group and other academic pupils. Tables 11 and 12 show that in all but three cases out of thirty-one the Terman scores of summer pupils were below those of groups in the regular academic year. These differences range from 2.7 to 61.9 points, with a median of 21.9. Table 40 gives a comparison between summer school pupils' Terman scores corrected to February 1, 1927, and Terman test norms for a similar period.

For the freshman year there is also a comparison between the summer group and another group of New York City pupils who had taken the Terman test on October 1, two years previously. These latter scores are taken from the records of those pupils which Symonds used in establishing his ability standards. There were not enough cases for New York City pupils in the other three years to make valid comparisons. This portion of

the study further substantiates the statement made earlier that the summer school pupils constitute a group of inferior intelligence.

TABLE 40

COMPARISON OF TERMAN GROUP TESTS OF MENTAL ABILITY SCORES BETWEEN SUMMER HIGH SCHOOL GROUP AND STANDARD GRADE NORMS (ALL CORRECTED TO FEBRUARY)

GROUPS	FRESHMAN			SOPHOMORE			JUNIOR			SENIOR		
	Q_1	Med.	Q_3	Q_1	Med.	Q_3	Q_1	Med.	Q_3	Q_1	Med.	Q_3
Summer School Group	82	100	128	92	114	138	104	120	150	110	137	160
Terman Groups	81	104	128	98	122	147	112	138	163	122	147	169
New York City Group	88	109	131									

AGES OF SUMMER SCHOOL PUPILS

In studying the ages of the summer school pupils it was necessary to go back to the ages which they had given on their achievement test papers. It was found that the data on the questionnaires were not definite enough, since the questionnaires had asked only for the year in high school in which the pupils were enrolled during the preceding semester, January to June 1927, and the data for regular academic pupils with which a comparison had to be made were given for terms rather than years. Later in the year the writer secured from the pupils' home high schools a record of the official terms, during the first semester 1926-1927, of pupils who had taken the summer achievement tests. A record was received for 968 of the 1,525 pupils tested. In some schools these records for official terms two semesters previously were not preserved. Table 41 is constructed on the basis of the age grade tables in the statistical reports of the New York City Board of Education, which classifies pupils in the first term with ages from 14 to 15 years as normal; in the second term with ages from 14½ to 15½ as normal, and so on for the remainder of the high school course to the eighth term. None of the pupils in the 1927 summer session had been in the eighth term the preceding September; so no comparisons are available there. In the New York City high schools, 16.6 per

TABLE 41

NUMBER AND PER CENT OF SUMMER HIGH SCHOOL PUPILS OVER-AGE, NORMAL AGE, AND UNDER-AGE

GRADE	OVER-AGE	NORMAL AGE	UNDER-AGE
1	40	28	7
2	89	75	38
3	104	86	53
4	88	70	47
5	54	56	21
6	43	32	15
7	10	9	3
Total	428	356	184
Per Cent	44.2%	36.7%	19.0%

cent of the pupils are over-age, 32.5 per cent normal age, and 50.9 per cent under-age. The table shows that in the summer high school the per cent of normal pupils is slightly higher than for the academic year, and that the per cent of over-age and under-age pupils is practically reversed.

PUPIL REACTIONS AS TO THE VALUE OF THE SUMMER HIGH SCHOOL

Pupils were asked whether they secured more or less from their work in the summer high school than from their work during the regular academic year. Table 42 is a summary of their reactions. Fifty-six per cent feel that they get more; 17 per cent feel that there is no difference, and 26 per cent feel

TABLE 42

PUPILS' REACTION TO THE VALUE OF SUMMER SCHOOL

CLASS	MORE	LESS	SAME
Freshman	25	18	10
Sophomore	82	38	17
Junior	72	36	32
Senior	53	16	11
Total	232	108	70
Per Cent	56.5%	26.3%	17%

that they get less. Seventy-three per cent, therefore, feel that they get from the summer work as much as or more than they get from their regular academic work. There is no doubt that a great many do, for the summer work is more adapted to their ability. They are allowed to take but little work and hence cannot scatter their energies, and the supervised study periods of 80 minutes in length are designed to adapt the work to the individual.

Reasons for Attending Summer High School

On the questionnaires were listed five possible reasons which a pupil might have for attending the summer high school. Below these an extra blank space was provided in which the pupil might write any other reason not covered by any of these. No pupil used this extra space provided. The reasons listed were:

1. Your parents compel you to come;
2. You desire to make up for failure;
3. You desire to do new work;
4. You desire to graduate in September;
5. You desire to enter college in the fall.

In a few instances pupils checked more than one of the reasons listed. Table 43 is a summary of this information. Sixty per cent desire to make up for failure; 29 per cent to do advanced work; 6 per cent to graduate in September; and 4 per cent to enter college.

Summary and Conclusions

In a study of the enrollment of the Washington Irving Summer High School it was noted that the pupils were registered in increasing numbers as they advanced in their school careers. An unusually high proportion were registered in the senior year. A very large number were retarded. This study did not take account of the retardation caused by their failures during their last final examination period before the summer school. Had it done so, the number of pupils retarded would perhaps have reached or exceeded 30 per cent. Twenty-four per cent were taking advanced work, 61 per cent repeat work, and 15 per cent both advanced and repeat work. It is probable that nearly 70 per cent of the pupils are registered in subjects they had previously failed. About one-third of the pupils had attended summer high school at some time previous. These pupils are probably habitual

TABLE 43

REASONS PUPILS GIVE FOR ATTENDING SUMMER HIGH SCHOOL

REASON	NO. OF FRESHMEN	NO. OF SOPHOMORES	NO. OF JUNIORS	NO. OF SENIORS	TOTAL	PER CENT
1				1	1	
2	40	110	94	39	283	60%
3	18	44	53	22	137	29
4			5	25	30	6
5			3	18	21	4
Total	58	154	155	105	472	

failures whom the summer school is encouraging to remain in school longer and to finish, perhaps, their high school work. The per cent of pupils registered in the various curricula corresponds very closely to that of the regular academic year. More than one-half of the girls and more than three-fourths of the boys expect to go to college. The mental ability of summer school pupils is far below that of regular academic pupils. The per cent of over-age and under-age pupils is almost entirely reversed from what it is during the regular school year in New York City. The majority of pupils feel that they get more from the summer high school than from the regular academic year. Sixty per cent of the pupils attended summer high school to make up for previous failure.

CHAPTER VII

POSSIBLE DEMANDS FOR SUMMER HIGH SCHOOLS AS REVEALED BY A STUDY OF HOW HIGH SCHOOL PUPILS SPEND THEIR SUMMER VACATION

A study of the quality of the work done in the summer high school, of the sustaining ability of the pupils who have received their promotions in such schools, and of pupil personnel is scarcely complete without investigating the needs for such schools. In order to discover what the needs in New York City were which such schools might satisfy, it was thought best to study the way in which the regular academic student body spends its summer vacation. The Morris High School in New York City was used for this purpose. Reasons have already been given for its selection.

Every pupil in attendance in the Morris High School and its two annexes, except first term pupils who had not been attending high school previous to the 1927 summer session, on December 12 and 13, 1927, filled out questionnaires. Approximately 3,500 were turned in. It was thought best here, as in the study of the summer high school pupil personnel, that a more representative sampling would be secured if all pupils were to fill out the questionnaires and the sampling was made afterwards. These questionnaires were arranged by the official classes in which these pupils were registered the previous term, and every eighth one, or approximately 12 per cent, was selected. The selection by classes is given in Table 44. The senior class numbers only 36, but this number represents about one-half of the senior class of June 1927. It represents only those who were in the seventh term in their senior year at that time. The pupils in their eighth term completed their curricula in June 1927.

Pupils Attending Summer High School

Table 45 gives the number of pupils from this school attending summer high schools during the summer of 1927, and summers

previously. Twenty-eight per cent attended the 1927 summer session, and 22 per cent attended previous to 1927. No doubt the fact that the Morris High School holds a summer session may account for this extra heavy registration. This school had not had a summer session previous to 1927, however, and yet 22 per cent, or nearly one-fourth of the entire student body, had attended earlier sessions. This fact is significant.

TABLE 44

NUMBER OF PUPILS IN THE MORRIS HIGH SCHOOL SELECTED FOR THIS STUDY

CLASS	BOYS	GIRLS	TOTAL
Freshman	78	66	144
Sophomore	72	66	138
Junior	34	46	80
Senior	16	20	36
Total	200	198	398

TABLE 45

NUMBER ATTENDING SUMMER HIGH SCHOOL IN 1927 AND PREVIOUS TO 1927

CLASSES	TOTAL NUMBER	NUMBER ATTENDING 1927 SUMMER SCHOOL	PER CENT ATTENDING 1927	NUMBER ATTENDING PREVIOUS TO 1927	PER CENT ATTENDING PREVIOUS TO 1927
Freshman	144	29	20%	8	5%
Sophomore	138	41	29	31	22
Junior	80	33	41	30	37
Senior	36	9	25	20	55
Total	398	112	28%	89	22%

EMPLOYMENT DURING THE SUMMER VACATION

The number and per cent of pupils employed for the entire summer vacation are given in Table 46. Twenty-three per cent of the boys and only 1 per cent of the girls were employed for the entire period. Table 47 gives the same information for those employed for shorter periods and the average number of weeks they were employed. Seventeen per cent of the boys and 8 per

cent of the girls were so employed. Table 48 shows the range in the number of weeks of employment for these pupils. For the boys the range is from two pupils for one week to five pupils for eight weeks, with four the most frequent number. For the girls, the range is from one pupil for one week to one for nine weeks, with two the most frequent number. The median number of weeks for boys and girls is 4.1 and 3.5 weeks, respectively. Fifty per cent of these pupils could have been employed for the

TABLE 46

NUMBER AND PER CENT OF HIGH SCHOOL PUPILS EMPLOYED FOR THE ENTIRE VACATION PERIOD

CLASSES	BOYS			GIRLS		
	Total Number	Number Employed Entire Vacation	Per Cent Employed	Total Number	Number Employed Entire Vacation	Per Cent Employed
Freshman	78	16	20%	66	1	1%
Sophomore ...	72	12	16	66	0	0
Junior	34	10	28	46	1	2
Senior	16	8	50	20	0	0
Total	200	46	23%	198	2	1%

TABLE 47

NUMBER AND PER CENT OF PUPILS EMPLOYED LESS THAN ENTIRE VACATION WITH AVERAGE NUMBER OF WEEKS EMPLOYED

CLASSES	BOYS			GIRLS		
	Number Employed	Per Cent Employed	Average Number of Weeks Employed	Number Employed	Per Cent Employed	Average Number of Weeks Employed
Freshman	8	10%	4.1	1	1%	3
Sophomore ..	13	18	4.4	5	7	3
Junior	9	26	5.7	6	10	4
Senior	4	25	4.5	4	25	5.3
Total	34	17%		16	8%	

TABLE 48

NUMBER OF WEEKS OF EMPLOYMENT FOR PUPILS EMPLOYED LESS THAN THEIR ENTIRE VACATION PERIOD

NUMBER OF WEEKS	NUMBER OF PUPILS EMPLOYED	
	Boys	Girls
9	0	1
8	5	0
7	3	1
6	6	1
5	2	2
4	7	1
3	5	4
2	4	5
1	2	1
Total	34	16
Median	4.1 weeks	3.5 weeks
Q_1	3.5 weeks	2.6 weeks
Q_3	6.9 weeks	5.5 weeks
Mode	4 weeks	2 weeks

short time they were and still have attended the summer high school session. Table 49 gives the number of hours of employment per day for all pupils who were employed at any time during the summer vacation. Table 50 is given largely as a matter of interest. It shows the number of dollars earned by the pupils during the time they worked. Had the number of weeks of employment and the weekly salaries for all pupils employed during the summer term been spread over the entire vacation period, the amount of employment and the salary received would have been very small.

HOW PUPILS WHO DID NOT WORK OR WHO DID NOT ATTEND SUMMER SCHOOL SPENT THEIR SUMMER VACATIONS

One of the questions asked the pupils in the Morris High School was: "If you did not attend summer high school, or did not work during the vacation, what did you do?" An opportunity was left here for free responses. The responses could easily be classified under six headings, namely, (1) seashore; (2) camp; (3) country; (4) travel; (5) mountains; and (6) at

home. It would have been desirable if the number of weeks they had spent in these ways had been known. Table 51 for boys and Table 52 for girls have summarized this information. These show that 54.7 per cent of the boys, and 47 per cent of the girls spent their entire vacations at home. Had it been known how many weeks these pupils had spent in the first five ways, it would perhaps be shown that a great many spent but a small portion of their vacations in recreation away from home, so that they must have spent a great share of their vacations in idleness. Some of these pupils who were in summer school or who were employed for only a portion of their time spent some of their vacations also in recreation; the 54.7 per cent and 47 per cent, respectively, above given are for those pupils who spent their entire vacations at home.

TABLE 49

NUMBER OF HOURS OF EMPLOYMENT FOR ALL PUPILS WHO WERE EMPLOYED FOR EITHER THEIR ENTIRE VACATION OR A FRACTION OF THEIR VACATION PERIOD

HOURS PER DAY	NUMBER EMPLOYED	
	Boys	Girls
14	1	0
13	0	0
12	0	0
11	2	0
10	2	0
9	10	2
8	33	10
7	3	3
6	7	2
5	4	0
4	5	0
3	6	1
2	2	0
1	5	0
Total	80	18
Median	8.2 hours	8.3 hours
Q_1	5.5 hours	7.5 hours
Q_3	8.8 hours	8.7 hours
Mode	8 hours	8 hours

TABLE 50

MONEY RECEIVED PER WEEK BY ALL PUPILS WHO WERE EMPLOYED DURING THEIR SUMMER VACATION, WHETHER EMPLOYED FOR ENTIRE VACATION OR A SHORTER PERIOD

DOLLARS PER WEEK	BOYS	GIRLS
30	1	0
27	1	0
25	2	0
24	0	1
20	5	1
19	2	0
18	4	1
17	3	0
16	1	1
15	18	3
14	4	0
13	3	0
12	10	2
11	1	1
10	11	5
9	2	0
8	3	1
7	2	0
6	1	0
5	2	1
4	1	0
3	2	1
2	1	0
1	0	0
Total	80	18
Median	$12.00	$14.20
Q_1	10.50	10.30
Q_3	15.90	15.80
Mode	15.00	10.00

Table 53 condenses information given in several earlier tables, and gives the number and per cent of the entire group represented who are at home during the vacation period. The per cent of idleness decreases as the pupils advance in their high school careers, with 35.4 per cent in the first year to 19.4 per cent in the last year. This is easily accounted for by the larger per cent registered in the summer school in the later years, but also perhaps more by the fact that child labor laws prevent the employment of boys and girls under certain ages. A great many pupils,

TABLE 51

WAYS IN WHICH BOYS SPENT THEIR SUMMER VACATION WHO DID NOT ATTEND SUMMER HIGH SCHOOL OR WHO WERE NOT EMPLOYED

CLASS	SEA-SHORE	CAMP	COUN-TRY	TRAVEL	MOUN-TAINS	AT HOME	TOTAL
Freshman ...	3	6	10	0	1	26	46
Sophomore ..	5	4	8	2	3	20	42
Junior	0	0	3	0	0	9	12
Senior	1	0	2	0	0	3	6
Total	9	10	23	2	4	58 (54.7%)	106

TABLE 52

WAYS IN WHICH GIRLS SPENT THEIR SUMMER VACATION WHO DID NOT ATTEND SUMMER HIGH SCHOOL OR WHO WERE NOT EMPLOYED

CLASS	SEA-SHORE	CAMP	COUN-TRY	TRAVEL	MOUN-TAINS	AT HOME	TOTAL
Freshman ...	11	2	14	2	1	25	55
Sophomore ..	4	1	9	3	6	22	45
Junior	4	3	3	0	1	13	24
Senior	5	2	0	0	1	4	12
Total	24	8	26	5	9	64 (47%)	136

TABLE 53

NUMBER OF PUPILS OCCUPIED OR IDLE FOR THE ENTIRE SUMMER VACATION

CLASS	TOTAL NUMBER IN CLASS	NUMBER IN SUMMER SCHOOL	NUMBER EMPLOYED FULL TIME	NUMBER AT HOME VACATION	PER CENT OF TOTAL NUMBER AT HOME
Freshman	144	29	17	51	35.4
Sophomore	138	41	12	42	30.4
Junior	80	33	11	22	27.5
Senior	36	9	8	7	19.4
Total	398	112	48	122	30.6

unless they can attend summer school, are forced into idleness during their long summer vacations.

Summary and Conclusions

A study of the ways in which high school pupils spend their summer vacations was undertaken in order to show a possible demand which might be made upon the summer high schools for the accommodations of more pupils.

Three hundred ninety-eight pupils, or approximately 12 per cent of the enrollment of the Morris High School, New York City, were studied. Twenty-eight per cent of these pupils had attended the 1927 summer high school. This is a rather large proportion of any school to attend the summer high school. An earlier chapter had shown that about 14 per cent of the academic enrollment of the entire city attended the summer high school, but the large enrollment was accounted for by the fact that this high school is one of those designated as a summer high school, and the easy availability of the school encouraged a larger proportion from that school to attend. Twenty-two per cent had attended summer high school previous to the 1927 summer session.

Less than one-fourth of the pupils are employed for their entire summer vacation, and about the same number were employed for shorter periods. For the 25 per cent who were employed for the shorter periods the range was from one to eight weeks. This fact indicates that a great many of these pupils might also have attended the summer high school. If their times of employment had been so arranged, at least 50 per cent of these pupils could have done so.

A further study of how pupils spend their summer vacations who do not work or who do not attend summer high school showed that about 50 per cent of them remain at home, many of them, no doubt, in idleness for the period of their vacation. If the number who remain in idleness at home is compared with the total number of pupils, it is shown that about 30 per cent are idle. These pupils may be idle largely because of the employment laws preventing their working. These pupils are forced into idleness, but were summer high school opportunities made available for all pupils who care to attend, the number who are forced into idleness would be largely reduced.

It is evident from this study that there must be hundreds of pupils in New York City, and perhaps in other large cities, who do nothing at all during their long summer vacations. A great many of those who do work are employed for so few weeks and so few hours per day that the amount of their work is almost negligible. Many are prevented from working because of the child labor laws. Where the economic conditions of the families of these pupils are such that the children must remain at home in idleness during their vacation, an opportunity to attend summer school would solve many problems.

The summer school facilities in New York City are limited. Even with its many summer high schools, the numbers who wish to attend are so large that it has been necessary to give first attention to the failures of the academic year, and then to pupils who wish to do advanced work. Many pupils who have advanced normally through school are, no doubt, forced into idleness. It seems that the summer high schools must continue to expand, and to offer educational opportunities to all pupils who can profit by them.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

The writer attempted five things in studying the summer high school:

1. To trace its development and to show its place in the movement for a longer school year;
2. To study the quality of the work done;
3. To study the ability which summer high school pupils have in later advanced work as a result of their work in the summer high school;
4. To study the summer high school pupil personnel;
5. To study the demands and needs for summer high schools.

1. The summer high school has been shown to be a phase of the movement for a longer school year. Other phases of the movement were the vacation school, the summer elementary school, and the all-year school. The vacation school arose primarily because of the rapid growth of cities, and the simultaneous shortening of the school year. Large numbers of elementary school pupils were unoccupied during their vacations, and the congested areas of our cities were becoming more and more numerous. Philanthropists and social workers organized vacation schools to keep pupils off the streets and occupied at worthwhile employment. Boards of Education later took over the work of these schools, and supported them from the regular tax budget. They stressed more and more the academic phase of instruction. Pupils were soon allowed to make up for a failure during the preceding school year or to do advanced work in order to secure extra credit in September. The schools were then called summer schools or summer elementary schools. The all-year school is an outgrowth of the summer elementary school. It is in reality an extended summer session of 12 weeks, which is made to articulate closely with the work of the regular session.

A summer school of 12 weeks incorporated as a part of the school year of four terms of 12 weeks each is what is considered an all-year school.

The summer high school seems to have come about as a result of a desire to extend high school pupils the same sort of privileges that had already been extended to elementary school pupils. The summer high school is peculiar to cities, and it is in the largest cities that the summer school has had its most pronounced growth.

2. Five achievement tests were given during the summer high school session in two schools in order to compare the quality of the work in the summer school with the quality of work during the regular academic year. Non-summer groups and summer groups were equated on the basis of Terman test scores. In only two instances were there significant differences in favor of the non-summer school group. Ten differences were not significant for either group. Seventeen differences were in favor of the summer group. It was concluded that the work of the summer high school group was superior to that of the regular academic year.

3. The success of summer high school pupils who were promoted to advanced work was compared with that of non-summer high school pupils in the regular academic year. In no instance was there a significant difference in favor of summer high school pupils. In five instances there were significant differences in favor of the non-summer high school group. The conclusion was drawn that non-summer high school pupils are superior in their ability to do advanced work. The fact that summer high school pupils were superior in their achievement during the summer session, but inferior in their ability to do advanced work when compared with non-summer high school pupils, was accounted for as follows: In the study of the achievement during the summer session the groups were equated on the basis of their Terman scores, but in the study of the ability of summer high school pupils to do advanced work, this equating of groups was impossible, because of the few cases and because of their being scattered in so many different high schools. It has already been shown that the Terman scores of the summer groups were much lower than for non-summer groups taking the same achievement tests. A later chapter also showed that the Terman scores of the

summer group were below the norms established by Terman for their respective grades. There is plenty of reason to believe, therefore, that had these groups been of equal initial ability these differences would probably have been different, and that the ability of summer school pupils to do advanced work might have been just as good as the ability of non-summer high school pupils in the same work.

Another explanation was made that the summer high school was perhaps better adapted for the particular groups of pupils than were the non-summer high schools.

4. In a study of the summer high school pupil personnel it was found that, in 1926-1927, 17.3 per cent of the pupils in New York City as reported in the average daily register for that year were in attendance in the summer high school. In the Washington Irving Summer High School 410 individual cases were studied. It was found by comparing the classes represented with the numbers in the same classes during the regular academic year, that the largest proportion was enrolled in the senior year; the smallest in the freshman year; and that the pupils seemed to take increasing advantage of the summer high school as they advanced in their school careers.

About 70 per cent of the pupils wished to make up for failure. This number corresponds very closely to that for New York State. Approximately one-third of the summer high school enrollment is recruited from those who have attended previously. Over one-half of the girls and over three-fourths of the boys expect to go to college.

A comparison of the ages of summer school pupils with the ages of pupils of the entire city during the regular academic year shows that there is a greater proportion of normal age pupils in attendance in the summer school, a much larger proportion of over-age pupils, and a much smaller proportion of under-age pupils. In fact the per cent of over-age and under-age pupils is almost entirely reversed.

Seventy-three per cent of the summer pupils feel that they get from summer school as much as or more than they get during the regular academic year.

Six per cent of the pupils gave, as their reason for attending summer high school, their desire to graduate in September, and 4 per cent gave as their reason the desire to enter college.

5. To study what the demands and needs for summer high schools are, approximately 12 per cent of the student body of a representative high school were studied. It was found that about 30 per cent of the pupils do nothing during their summer vacation. They remain at home for the entire time. A great deal of this idleness was accounted for by the child labor laws which forbid many types of employment to young people. The facilities of the summer high school could well be extended to provide for these pupils.

APPENDIX A

SUMMER HIGH SCHOOL PERSONNEL STUDY

Please Fill the Following Blanks Carefully—use ink if possible)

1. Your name .....2. Address .....
3. Date of birth (last name first).....4. Your age in years and months.....
5. What high school (month, day, year) did you attend last June?.....
6. Other high schools attended.....
7. When did you enter high school?.....
8. When do you expect to graduate? (month, year).....
9. Have you been out of high school for an entire term at any time? (month, year)
.....
10. If so, how many terms have you been out of high school?.....
11. Reasons .....
12. Has your attendance been fairly regular during the time you have been registered in high school?.....
13. If your attendance has not been regular give reasons and approximate length of time you were absent (e.g. pneumonia, one month).....
14. Do you have a part time position in which you earn money while in high school?.....
15. If so, how many hours per day do you work?.....
16. What is the kind of work?.....
17. What high school course do you expect to finish?.....
18. Do you expect to enter College?.....19. When?.....
20. List the subjects you have failed during your high school course (do not include Summer School). List subject first with year and term afterwards, also number of times you have failed. (e.g. Latin One, first term, once).....
21. What subjects are you now taking in summer school? Please list year of subject and term (e.g. French Two, 1st term; Pl. Geometry, 2d term)

.....
.....
.....

22. Which of the above have you failed previously?.....
23. Why are you attending summer school? Place a check after the reason below which applies to your case. If none applies, write your reason in the last blank.

Parents compel you to come.....
You desire to make up for failure.....
You desire to do new work.....
You desire to graduate this September.....
You desire to enter college this fall.....
.....

24. Have you ever attended summer high school before?.....
25. If so, when?..... Where?.....
26. Do you get more or less from summer school work than from the work of the regular year?.....
27. What extra-curricular activities (athletics, dramatics, student council, etc.) in high school are you identified with?.....
28. What position do you occupy in these activities (e.g. member, president, etc.).....
29. What was your official rank in high school last June? (Freshman, Sophomore, Junior, Senior).....

APPENDIX B

VACATION STUDY—TO STUDY THE DEMANDS AND NEEDS FOR SUMMER HIGH SCHOOLS.

TO STUDENTS:

This has to do with the way in which New York High School Students spend their summer vacations. No personal record is made of what any one individual does. Please answer all questions very carefully. Read all the statements below before answering any of them. Then go back and fill out all the blanks just as painstakingly as possible.

Your name..... Boy or girl?.....
(Last Name) (First Name)

What was your official class in school LAST term, FEB.-JUNE, 1927?
.....
(1, 2, 3, 4, 5, 6, 7, 8)

When did you enter high school?.....
(Sept. or Feb. and Year—e. g. Feb. 1925)

When were you born? (Year, month, day).....

How old are you? (Years, months, days).....

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1. *a* Did you attend summer high school last summer (1927)?.....
   b Did you continue to the end of summer school last summer?.....
2. If you attended summer high school, what school did you attend?
   .....
3. Did you attend summer high school previous to last summer?.....
4. How many summers have you attended summer high school?.....
5. Were you employed last summer?.....
6. By whom were you employed?.....
7. How many weeks were you employed? (If for the entire vacation, write summer vacation; if not for the entire summer, write the number of weeks) .....
8. How many hours per day were you employed?.....
9. About how much money did you receive per week?.....
10. What work did you do? (Clerk, office boy, etc.).....
11. If you did not attend summer high school, or did not work during the vacation, what did you do?.....
12. Is it necessary for you to work during the summer time in order to be able to attend high school?.....
13. Are you now employed while attending high school?.....

APPENDIX C

SCHOOLS REPRESENTED IN THE TESTING PROGRAM IN THE WASHINGTON IRVING SUMMER HIGH SCHOOL

High School	Borough
Bay Ridge	Brooklyn
Boys	Brooklyn
Brooklyn Evening	Brooklyn
Brooklyn Technical	Brooklyn
Bryant	Queens
Bushwick	Brooklyn
Cathedral	Manhattan
Curtis	Richmond
Dewey Junior	Brooklyn
DeWitt Clinton	Manhattan
Eastern District	Brooklyn
East Side Evening	Manhattan
Erasmus Hall	Brooklyn
Evander Childs	Bronx
Far Rockaway	Queens
Flushing	Queens
Fordham Evening	Bronx
Forsyth Junior	Manhattan
Franklin K. Lane, Jr.	Brooklyn
George Washington	Manhattan
Girls Commercial	Brooklyn
Girls	Brooklyn
Haaren	Manhattan
High School of Commerce	Manhattan
Hunter College	Manhattan
Jamaica	Queens
James Madison	Brooklyn
James Monroe	Bronx
Julia Richman	Manhattan
Manual Training	Brooklyn
Morris	Bronx
Newtown	Queens
New Utrecht	Brooklyn
Seward Park	Manhattan
Stuyvesant	Manhattan

Talmudical Academy ..... Manhattan
Textile ..... Manhattan
Thomas Jefferson ..... Brooklyn
Tottenville ..... Staten Island
Wadleigh ..... Manhattan
Walton ..... Bronx
Washington Irving ..... Manhattan

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